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Naval Facilities Engineering Command
Contracts Department
1220 Pacific Highway, Building 127, Room 112
San Diego, California 92132-5190

CONTRACT NO. N68711-04-D-1104
CTO NO. 0003

FINAL

GROUNDWATER SAMPLING REPORT, UNDERGROUND STORAGE TANK SITE 14121

Revision 0
July 26, 2005

MARINE CORPS BASE
CAMP PENDLETON, CALIFORNIA

DCN: SES-TECH-05-0091

Prepared by:

SES-TECH

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ABBREVIATIONS AND ACRONYMS

amsl	above mean sea level
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CTO	Contract Task Order
DEH	Department of Environmental Health
EPA	U.S. Environmental Protection Agency
ft/ft	feet per foot
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MCB	Marine Corps Base
MCL	maximum contaminant level
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
µg/L	micrograms per liter
MS/MSD	matrix spike/matrix spike duplicate
MTBE	methyl tert-butyl ether
PAH	polynuclear aromatic hydrocarbon
RWQCB	Regional Water Quality Control Board
SPLP	synthetic precipitation leaching procedure
TPH-d	total petroleum hydrocarbons quantified as diesel
TPH-g	total petroleum hydrocarbons quantified as gasoline
UST	Underground Storage Tank
VOC	volatile organic compound
WQO	water quality objective

1.0 INTRODUCTION

This Groundwater Sampling Report, prepared by SES-TECH, a joint venture between Sealaska Environmental Services LLC and Tetra Tech FW, presents the results of groundwater sampling completed in June 2005 at Underground Storage Tank (UST) Site 14121 at the Marine Corps Base (MCB) Camp Pendleton, California. This groundwater sampling event was conducted in response to a request from the Regional Water Quality Control Board (RWQCB) in a letter dated November 30, 2004 (reference: SMC:50-9293.05:peurp) for one additional round of groundwater sampling before site closure could be determined. The groundwater sampling activities conducted at the site, as well as the associated reporting activities, were performed under Contract Task Order No. 0003 for the Southwest Division, Naval Facilities Engineering Command Indefinite Delivery/Indefinite Quantity Contract No. N68711-04-D-1104.

1.1 SCOPE OF WORK

Groundwater monitoring at UST Site 14121 included measuring water levels and collecting and analyzing groundwater samples. During the June 2005 sampling event, all wells at the site (four wells) were sampled. As requested by the RWQB in the November 30, 2004 letter, the samples were analyzed for total petroleum hydrocarbons quantified as gasoline (TPH-g), total petroleum hydrocarbons quantified as diesel (TPH-d), benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tert-butyl ether (MTBE), and polynuclear aromatic hydrocarbon (PAHs).

1.2 SITE IDENTIFICATION

Site identification data:

Site Address:	Building 14121, 14 Area, MCB Camp Pendleton
Facility Name:	Logistics Modernization Team Offices
RWQCB Case No.:	9UT3293
DEH Case:	H05939-250
Responsible Party:	United States Marine Corps
Contact Person:	Mr. Chet Storrs Assistant Chief of Staff, Environmental Security Building 22165, Box 555008 MCB Camp Pendleton, California 92055-5008 (760) 725-9774

2.0 GROUNDWATER SAMPLING

The following sections summarize the June 2005 sampling activities conducted at UST Site 14121.

2.1 WATER LEVEL MEASUREMENTS

Prior to groundwater sampling, the depth to water and the total well depth for each well were measured and recorded on a well sampling log (Appendix A). The depths were measured from the top of the well casing. Table 2-1 provides a summary of current and historical groundwater elevation data. During measurement of the water levels an obstruction was encountered in well MW3, and as a result the total depth was recorded as 11.88 feet below the top of casing (btoc), although well construction diagrams indicate that the total depth of the well is approximately 24 feet bgs. A groundwater elevation contour map was prepared based on the most recent recorded water levels (Figure 2-1).

2.2 SAMPLING METHODOLOGY

On June 1, 2005, all monitoring wells (MW1, MW2, MW3, and MW4) were sampled using low-flow sampling methodology.

Before sampling, a bladder pump was slowly lowered into each well and positioned near the center of the screen interval. The pump in well MW3 was placed below the top of the screen one foot above the obstruction. In addition, a water level indicator was placed at the water surface to monitor water-level drawdown during purging. While purging at the lowest operational setting of the pump, which was approximately 100 to 110 milliliters per minute, the water level surface began to drop and exceeded the minimum drawdown requirement of 0.33 feet in wells MW2, MW3 and MW4. The drop in water level is likely attributed to the low transmissivity of the aquifer materials.

Because a stabilized water level could not be achieved, even at very low pumping rates, a passive or minimum purge sampling method was performed following the methodology presented in a U.S. Environmental Protection Agency (EPA) Groundwater Issue paper titled *Low Flow (Minimal Drawdown) Ground-Water Sampling Procedures* (Puls and Barcelona, 1996). The passive/minimal purge approach requires the removal of a minimum of three volumes of the sampling system from each well. The liquid volume of the sampling system consists of the volume of the pump's bladder, discharge tubing and flow through cell attached to the water quality meter. After purging the required volume at the lowest flow rate achievable for each well, a groundwater sample was collected. To monitor groundwater conditions during purging, water-quality parameters were measured as follows: temperature, pH, electrical conductivity, turbidity, dissolved oxygen, and oxygen/reduction potential. These measurements were recorded

on the well sampling logs provided in Appendix A. Non-disposable downhole equipment, such as the pump and water-level indicator, were decontaminated between wells.

Groundwater samples were collected through new dedicated polyethylene discharge tubing, which was connected to the bladder pump. Each sample was collected in the appropriate containers, labeled, and placed in a cooler with ice immediately after sample collection for delivery to the analytical laboratory.

2.3 SAMPLE ANALYSES

Groundwater samples were sent to EMAX Laboratories (EMAX) for analysis of TPH-g and TPH-d using U.S. Environmental Protection Agency (EPA) Method 8015B, analysis of BTEX and MTBE by EPA Method 8260B, and analysis for PAHs by EPA Method 8270C.

2.4 WASTE MANAGEMENT

All equipment decontamination water and groundwater generated from well purging and sampling were temporarily contained in a polyethylene tank at the site and later transferred to a liquid storage tank located at the project trailer (21 Area, MCB Camp Pendleton). The tank was closed, marked, labeled, and located to minimize traffic hazards and discourage tampering. The wastewater was transported off site for disposal at a waste-permitted facility. The handling, management, transportation, and disposal of wastewater were conducted in accordance with state and federal laws and regulations. No wastes were stored at the site for more than 60 days. A copy of the waste manifest is provided in Appendix B.

3.0 GROUNDWATER MONITORING RESULTS

Groundwater flow and analytical results from the June 2005 sampling event are discussed in the following subsections.

3.1 GROUNDWATER FLOW DIRECTION

Groundwater elevations, as measured in June 2005, are presented in Figure 2-1.

As shown on Figure 2-1, groundwater elevations at the site ranged from 285.46 feet above mean sea level (amsl) at MW4 to 288.84 feet amsl at MW3. Based on water levels measured in June 2005, groundwater is flowing toward the southeast with an approximate gradient of 0.03 feet per foot (ft/ft).

3.2 ANALYTICAL RESULTS

A total of seven groundwater samples (including a field duplicate, a trip blank, and an equipment rinsate sample) were collected during the June 2005 event and sent to EMAX Laboratories for analysis. The analytical results were successfully uploaded to the RWQCB Geotracker database (Confirmation No. 6691972613). A summary current and historic groundwater sampling results is presented in Table 3-1.

TPH-g and MTBE were not detected in any of the monitoring wells.

TPH-d was detected in each of the wells at concentrations ranging from 0.21 to 1.1 mg/L. The maximum level of TPH-d (1.1 mg/L) was detected in well MW1, located adjacent to the former tank cavity.

Benzene was detected in wells MW1, MW2 and MW4 below the laboratory reporting limit (trace) at concentrations ranging from 0.32 to 0.46 μg/L. Toluene was only detected in MW1, at a trace concentration of 0.24 μg/L, and total xylenes were detected in wells MW1 and MW2 at trace concentrations of 0.36 μg/L and 0.59 μg/L, respectively. Ethylbenzene was not detected in any of the wells.

PAH analysis resulted in the detection of trace concentrations of acenaphthene (0.88 μg/L), acenaphthylene (0.24 μg/L), and flourene (0.27 μg/L) in well MW1. WQOs have not been established for these constituents. PAHs were not detected in wells MW2, MW3, and MW4.

Copies of the analytical laboratory reports and chain-of-custody forms are provided in Appendix C.

4.0 QUALITY ASSURANCE AND QUALITY CONTROL

This section summarizes the quality assurance and quality control (QC) results for the June 2005 groundwater monitoring event.

All groundwater samples were collected and preserved in accordance with the *San Diego County DEH Site Assessment and Mitigation Manual 2005* (DEH, 2005), and were delivered to the analytical laboratory within 24 hours of sample collection by a laboratory courier and analyzed within the method-specified analytical holding times. EMAX Laboratories, Inc., a state of California-certified and Naval Facility Engineering Service Center evaluated laboratory, performed sample analyses.

One field duplicate sample was collected from monitoring well MW1 (identified as 0003-007). The analytical results for the duplicate sample correlated well with the primary sample results (identified as 0003-006). The relative percent differences (RPDs) for detected target analytes such as TPH-d, benzene, acenaphthene, acenaphthylene, and fluorene ranged from 0 to 28 percent indicating an excellent agreement between the field sample and its duplicate.

To assess potential cross-contamination of BTEX and MTBE during sample transport, one trip blank sample (identified as 0003-001) was sent along with groundwater samples to the laboratory and analyzed for BTEX and MTBE. In addition, one equipment rinsate sample was collected (identified as 0003-002) to assess potential cross-contamination of BTEX, MTBE, TPH-d, and PAHs from equipment used for sampling. Detectable levels of target analytes were not reported above half the project reporting limits (RLs) in either the trip blank or the equipment rinsate sample indicating the effectiveness of sample transport and of the decontamination procedure yielding no cross-contamination during this sampling event.

In accordance with analytical method specifications, method blanks, surrogate spikes, laboratory control samples (LCSs), and duplicate LCSs were analyzed to assess method accuracy and precision.

No detectable levels of target analytes were found in the method blanks during this event. Percent recoveries in LCS, LCD, and surrogates and RPDs between the spiked duplicates were well within the project-specified QC acceptance limits. One of the LCSs for acenaphthene and acenaphthylene were recovered slightly lower than the project QC acceptance limits. The acceptable second LCS recoveries indicated method control.

In accordance with the SAP (SES-TECH, 2005), Laboratory Data Consultants, Inc., a third-party validation company, located in Carlsbad, California, performed EPA Level III/IV validation of analytical data. For this sampling event, 1 sample was validated according to the EPA Level IV protocol, and 6 samples (including field QC samples) were validated according to the EPA Level III protocol. The validation reported that all of the applicable criteria were met for all of the

samples with few minor exceptions. Data validation reported only minor discrepancies, which resulted in "J" qualifiers (estimated value) applied to some of the analytical results.

5.0 SUMMARY

The analytical results for the June 2005 groundwater sampling event were successfully uploaded to the RWQCB Geotracker database (Confirmation No. 6691972613). During the June 2005 sampling event TPH-d was detected in each of the four wells at UST Site 14121 at concentrations ranging from 0.21 mg/L to 1.1 mg/L. TPH-g and MTBE were not detected, and one or more of benzene, toluene, and total xylenes were reported at trace concentrations in wells MW1, MW2, and MW4. Low concentrations of three PAHs were also detected in well MW1, but were non-detect in wells MW2, MW3, and MW4.

As indicated in a letter dated November 30, 2004 (SMC:50-3293.05:peurp) the RWCQB had concerns about the site and requested this groundwater sampling event be completed before considering site closure. As listed in the RWCQB letter, the concerns included 1) possible effects of residual soil contamination left on-site after soil excavation, 2) possible changes in the physical or chemical equilibrium at the site during the past few years, and 3) the need to provide a high degree of protection to threatened waters, including Pilgrim Creek, which is located approximately 200 feet downgradient of the site.

As summarized in Table 3-1, TPH-d was detected in groundwater during the 1997 site assessment in only one of the four monitoring wells. MW1, located adjacent to the former tank cavity, contained 1.95 mg/L of TPH-d. TPH-d was also reported in hydropunch samples collected from two soil borings (B3 and B8) located downgradient of the tank cavity (however, not as far downgradient as wells MW2 and MW4), at levels of 1.0 mg/L and 3.8 mg/L. Data from the 1997 site assessment suggested that TPH-d impacted groundwater extended downgradient from the former tank cavity approximately 90 feet. Data from subsequent groundwater sampling events completed in 1999 and 2003, however, suggested TPH-d was not present in groundwater. During the June 2005 sampling event TPH-d was again detected in MW1 (located adjacent to the former tank cavity) at 1.1 mg/L, and for the first time TPH-d was detected in the other three monitoring wells at the site at concentrations between 0.21 mg/L and 0.89 mg/L. Comparing the 1997 data to the 2005 data, the TPH-d concentration in groundwater at the former tank cavity has decreased by almost 50% (from 1.95 mg/L to 1.1 mg/L), but at the same time the plume has migrated downgradient and TPH-d is now present in relatively low levels in downgradient wells. This type of contaminant transport pattern (between the 1997 data and 2005 data) could be expected during the time after a contaminant source is removed, and may suggest residual soil contamination is not contributing to the plume in any significant way (the maximum concentration in groundwater in the source area is decreasing and the plume is migrating with natural groundwater flow).

To address the RWQCB's concern about a change in physical and chemical conditions at the site during the past few years, no significant changes were observed. Water levels are currently

slightly above their previous highest recorded levels by approximately 0.5 to 1.0 feet, and the nature of the groundwater contaminants has not changed.

To address the RWCQB's concern about the impact the TPH-d plume may have on Pilgrim Creek, the nearest surface water body, it is important to understand whether or not Pilgrim Creek is a "gaining" creek or a "loosing" creek. Most, if not all, creeks in the arid western United States, and Southern California in particular, are loosing creeks, they have water tables that slope away from the creek indicating water will move out of the creek and into groundwater (groundwater will not recharge the creek).

Based on visual observations looking from the creek bed towards the site, the creek bed appears to be approximately 5 feet lower in elevation that the former tank cavity area, and groundwater, based on current water levels, is approximately 10 feet bgs at the former tank cavity area (MW1). In addition, groundwater is decreasing in elevation toward the creek bed, and may be as much as 5-6 feet deeper by the time it reaches the creek bed. Therefore, it is believed nearby Pilgrim Creek has not been, and cannot be, impacted by TPH-d in groundwater at UST Site 14121.

In summary, even though results of the June 2005 groundwater sampling event indicate that low levels of TPH-d were detected for the first time in some of the wells, the maximum TPH-d concentration (detected at the former tank cavity area) was lower than the previous maximum result by almost 50% (1.95 mg/L versus 1.1 mg/L). In addition, since nearby Pilgrim Creek is not expected to be impacted by local groundwater, closure is again requested to be considered for UST Site 14121.

6.0 REFERENCES

California Regional Water Quality Control Board (RWQCB). 1994. *Water Quality Control Plan for the San Diego Basin (Basin Plan) 94 (amended).*

Puls R. and M.J. Barcelona. 1996. *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures.* April.

SES-TECH. 2005. *Final Sampling and Analysis Plan UST Site 14121,MCB Camp Pendleton (Field Sampling Plan and Quality Assurance Project Plan, Revision 1.* April 29.

San Diego County Department of Environmental Health, Land and Water Quality Division (DEH). 2005. *San Diego County Site Assessment and Mitigation Manual 2005*.

TABLES

TABLE 2-1

SUMMARY OF WATER LEVEL ELEVATIONS
UST SITE 14121, MCB CAMP PENDELTON, CA

Monitoring Well ID	Well Screen Interval (feet btoc)	Reference Point (toc) Elevation (feet amsl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet amsl)
MW1	9.5-24.5	297.50	15-Oct-97	12.88	284.62
			19-Jan-98(1)	11.97	285.53
			29-Apr-99	11.29	286.21
			11-Feb-03	12.16	285.34
			1-Jun-05	10.10	287.40
MW2	7.5-22.5	295.29	15-Oct-97	11.14	284.15
			19-Jan-98(1)	9.89	285.40
			29-Apr-99	9.56	285.73
			11-Feb-03	10.25	285.04
			1-Jun-05	9.12	286.17
MW3	9.5-24.5	298.28	15-Oct-97	13.41	284.87
			19-Jan-98(1)	11.46	286.82
			29-Apr-99	10.91	287.37
			11-Feb-03	dry	(dry)
			1-Jun-05	9.44	288.84
MW4	9.5-24.5	293.45	05-Nov-97	10.38	283.07
			19-Jan-98(1)	8.78	284.67
			29-Apr-99	8.89	284.56
			11-Feb-03	8.95	284.50
			1-Jun-05	7.99	285.46

Notes:

(1) - Groundwater elevation measurements only recorded during this period, no groundwater samples were collected.

amsl- above mean sea level

btoc- below top of casing

MCB- Marine Corps Base

toc- top of casing

UST- Underground Storage Tank

TABLE 3-1

SUMMARY OF GROUNDWATER SAMPLING RESULTS, UST SITE 14121, MCB CAMP PENDELTON, CA

Well ID	Date Sampled	Sample ID	TPH-g	TPH-d	VOCs											PAHs			
					Benzene	Toluene	Ethylbenzene	Xylenes (total)	N-Propylbenzene	Naphthalene	Trichloroethene	Tetrachloroethene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	MTBE	Acenaphthene	Acenaphthylene	Naphthalene	Fluorene
			mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Water Quality Objectives (WQOs)			0.005 (1)	0.1 (1)	1	150	680	1750	30	0.5	5	5	(2)	(2)	13 (3)	(2)	(2)	(2)	(2)
MW1	15-Oct-97	not listed	na	**1.95**	--	--	3.2	3.2	2.6	21	--	2.1	8.3	4.1	na	--	--	10.4	2.6
	29-Apr-99	not listed	--	--	--	--	--	--	na	na	na	na	na	na	--	--	--	--	--
	28-Feb-03	020314121-001	na	--	--	--	--	--	--	na	1J	--	--	--	--	na	na	na	na
	1-Jun-05	0003-006	--	**1.1**	0.41J	--	--	--	na	na	na	na	na	na	--	1.0	0.27J	--	0.36J
	1-Jun-05	0003-007 (Dup)	--	**1.1**	0.39J	0.24J	--	0.36J	na	na	na	na	na	na	--	0.88J	0.24J	--	0.27J
MW2	15-Oct-97	not listed	na	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	29-Apr-99	not listed	--	--	--	--	--	--	na	na	na	na	na	na	--	--	--	--	--
	28-Feb-03	020314121-002	na	--	--	--	--	--	--	na	3	--	--	--	--	na	na	na	na
	1-Jun-05	0003-004	--	**0.86**	0.46J	--	--	0.59J	na	na	na	na	na	na	--	--	--	--	--
MW3	15-Oct-97	not listed	na	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	29-Apr-99	not listed	--	--	--	--	--	--	na	na	na	na	na	na	--	--	--	--	--
	28-Feb-03	well dry	na	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	1-Jun-05	0003-005	--	**0.26**	--	--	--	--	na	na	na	na	na	na	--	--	--	--	--
MW4	05-Nov-97	not listed	na	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	29-Apr-99	not listed	--	--	--	--	--	--	na	na	na	na	na	na	--	--	--	--	--
	28-Feb-03	020314121-003	na	--	--	--	--	--	--	na	--	--	--	--	--	na	na	na	na
	1-Jun-05	0003-003	--	**0.21**	0.32J	--	--	--	na	na	na	na	na	na	--	--	--	--	--
Project Reporting Limits (4)			0.05	0.01	0.5	0.5	0.5	1.5	na	na	na	na	na	na	na	1	1	1	2

Notes:

Bold values exceed listed WQO

(1)- Secondary taste and odor threshold value

(2)- No established WQO

(3)- California DHS proposed primary MCL

(4)- Reporting limit listed for most recent sampling event only.

µg/L- micrograms per liter

mg/L- milligrams per liter

-- - Not detected above project reporting limits

Dup- field duplicate sample

MCB- Marine Corps Base

MTBE- methyl tert-butyl ether

na - not analyzed

PAHs- polynuclear aromatic hydrocarbons Method 8270C

VOCs- volatile organic compounds by EPA Method 8260B

TPH-g- total purgeable petroleum hydrocarbons quantified as gasoline (EPA Method 8015B)

UST- Underground Storage Tank

WQO - water quality objective

FIGURES

DRAWN BY: MD	CHECKED BY: TTK	APPROVED BY: MC	DCN: SES-TECH-05-0091	DRAWING NO: 05009111.DWG
DATE: 07/01/05	REV: REVISION 0		CTO: #003	

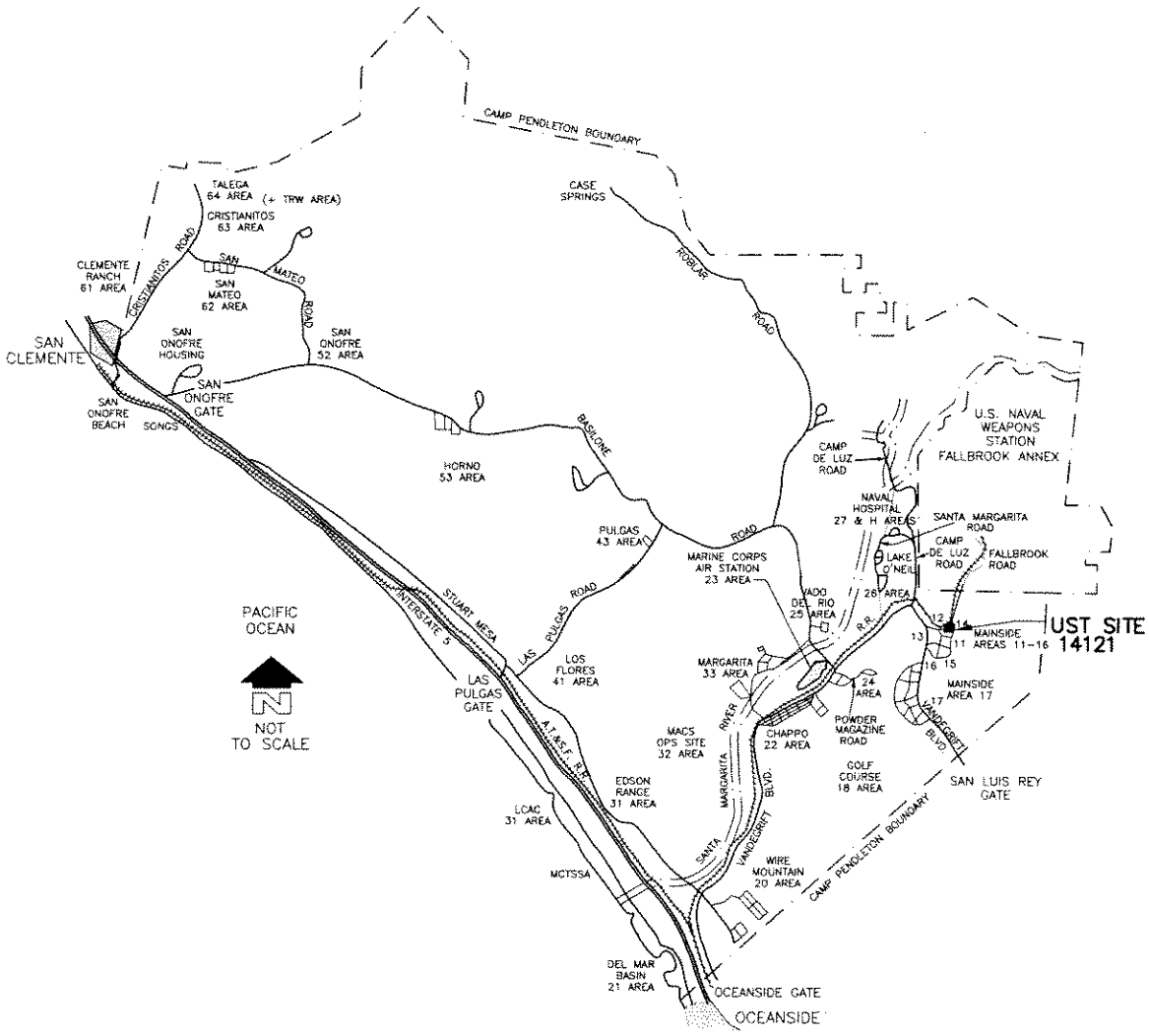


Figure 1-1
SITE LOCATION MAP

MCB CAMP PENDLETON

SES-TECH

P:\2973--SESTECH\CTO-0003 PENDLETON\SITE 14121\05-0091 GW MONITORING REPORT\DWG\05009111.DWG
PLOT/UPDATE: JUL 18 2005 14:31:09

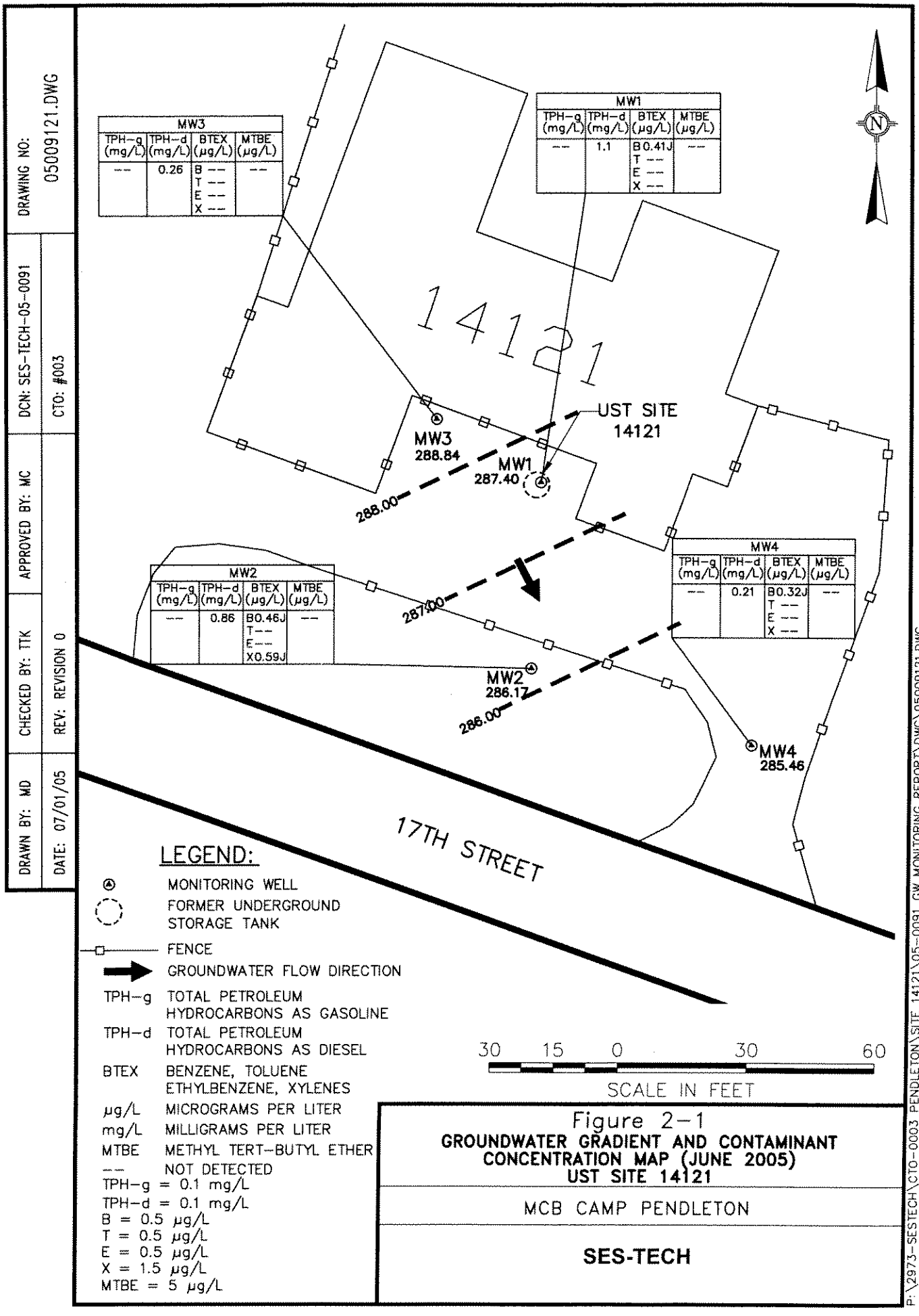


Figure 2-1
GROUNDWATER GRADIENT AND CONTAMINANT CONCENTRATION MAP (JUNE 2005)
UST SITE 14121

MCB CAMP PENDLETON

SES-TECH

P:\2973-SESTECH\CTO-0003 PENDLETON\SITE 14121\05-0091 GW MONITORING REPORT\DWG\05009121.DWG
PLOT/UPDATE: JUL 15 2005 15:12:58

APPENDIX A

WELL SAMPLING LOGS

SES-TECH

Field Water Level Measurements

Date: 6/1/05
Personnel: Tain Turpyn-Koeslor
N. Weinberger
Weather: Sunny, ~70°F

Project Name: OST SITE 14121
Project OFS: 2990.0070.0004
Measurement Device: Solinst
Comments: —

Well I.D.	Depth to Water from Measuring Point (feet)	Depth to Sediment from Measuring Point (feet)	Comments
MW1	10.16	24.74	
MW2	9.12	22.13	
MW3	9.44	11.48	obstruction below water
MW4	7.95	24.07	

LOW-FLOW PURGING AND SAMPLING DATA SHEET

Project Name: UST Site 14121
Project Number: 2990.0030.0005
Date: 6/1/05
Site Engineer(s): Tanis Turpin-Kessler, Nick Wernberger

Well Number: MW1
Equipment: QED Sample Pro Mini Bladder Pump
Sample ID: 0003-006/007 Time: 1345/1420
Contractor: Tetra Tech FW, Inc

Reference: Top of Casing	Before (TK)	After
Depth to Water (ft)	10.053	10.12
Depth of Well (ft)	24.74	
Depth to Top of Screen	9.5	
Screen Length (ft)	15	
Pump depth (ft)	~17	
Pump Rate	100 mL/min	
Sample Pump Rate	100 mL/min	
System Volume	~510 ml	

Total Volume Purged (mL): 2,566

Notes/Calcs:
(2.4·17)+470 = 510.8
System Vol (mL) = (2.4*H)+470
where
2.4mL/ft = tubing volume per foot (1/8"ID)
H = length of tubing in feet
470 mL = Bladder volume + Flowthru cell volume

Time	pH	Conductivity (µmhos)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Cum. Volume (mL)	Comments
1345							10.05	0	Start Pump
1350	5.61	12,100	2.17	23.4	23	36.4	10.08	500	clear, no odor
1355	5.55	12,300	0.46	24.6	28	24.7	10.09	1000	" "
1400	5.57	12,400	0.25	24.2	36	32.7	10.11	1500	" "
1405	5.57	12,700	0.25	24.1	40	38.2	10.12	2000	" "
1410	5.59	12,800	0.23	24.1	42	40.7	10.12	2500	" "
1415	Collect Sample # 0003-006								
1420	Collect Sample # 0003-007				(FD)				
Stability:	± 0.2 units	± 3-5%	± 0.2 mg/L	± 0.3 %	± 20 mV	± 10%			

Hach Fe^{2+} N/A

Samples were collected directly from pump unless otherwise noted.

LOW-FLOW PURGING AND SAMPLING DATA SHEET

Project Name: UST Site 14121
Project Number: 2990.0030.00005
Date: 6/1/05
Site Engineer(s): Tania Turpijn-Keasler, Nick Weinberger

Well Number: MW2
Equipment: QED Sample Pro Mini Bladder Pump
Sample ID: 0003-004 Time: 1212
Contractor: Tetra Tech FW, Inc

Reference: Top of Casing	Before	After
Depth to Water (ft)	9.12	9.56
Depth of Well (ft)	22.13	
Depth to Top of Screen	7.5	
Screen Length (ft)	15'	
Pump depth (ft)	15.5	
Pump Rate	110 ml/min	
Sample Pump Rate	100 ml/min	
System Volume	525.2	

Total Volume Purged (mL): 3,300

Notes/Calcs:

(2.4 x 23) + 470 = 525.2

System Vol (mL) = (2.4*H)+470
where
2.4mL/ft = tubing volume per foot (1/8"ID)
H = length of tubing in feet
470 mL = Bladder volume + Flowthru cell volume

Time	pH	Conductivity (μmhos)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Cum. Volume (mL)	Comments
1137	—	—	—	—	—	—	9.08	0	Start Pump
1142	6.40	12,000	3.03	22.1	180	2.1	9.20	550	clear no odor
1147	6.41	12,900	0.66	22.1	159	2.3	9.26	1100	" "
1152	6.42	13,600	0.35	22.1	146	0.3	9.31	1650	" "
1157	6.45	17,500	0.28	22.1	137	0.0	9.43	2200	" "
1202	6.47	17,000	0.23	22.2	131	0.0	9.51	2750	" "
1207	6.48	18,000	0.19	22.1	128	0.0	9.56	3300	" "
1212	Collect Sample # 0003-004								
Stability:	± 0.2 units	± 3-5%	± 0.2 mg/L	± 0.3 %	± 20 mV	± 10%			

Hach Fe^{2+} NA

Samples were collected directly from pump unless otherwise noted.

LOW-FLOW PURGING AND SAMPLING DATA SHEET

Project Name: UST Site 14121
Project Number: 2990.0030.00005
Date: 6/17/05
Site Engineer(s): Tania Turpin-Keesler, Nicholas Berger

Well Number: MW3
Equipment: QED Sample Pro Mini Bladder Pump
Sample ID: 0003-005 Time: 1314
Contractor: Tetra Tech FW, Inc

Reference: Top of Casing	Before	After
Depth to Water (ft)	9.32	10.38
Depth of Well (ft)	11.88	
Depth to Top of Screen	9.5	
Screen Length (ft)	15'	
Pump depth (ft)	~10.75 *	
Pump Rate	100 mL/min	
Sample Pump Rate	100 mL/min	
System Volume		

Total Volume Purged (mL): 3,000 mL

Notes/Calcs:
(2.4x)+470
System Vol (mL) = (2.4*H)+470
where
2.4mL/ft = tubing volume per foot (1/8"ID)
H = length of tubing in feet
470 mL = Bladder volume + Flowthru cell volume

Time	pH	Conductivity (µmhos)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Cum. Volume (mL)	Comments
1239							9.32	0	start Pump
1244	6.34	451	4.77	~~20.8~~ 22.4	-243	20.8	9.63	500	clear no odor
1249	6.24	411	0.77	22.4	-240	14.0	9.88	1000	" "
1254	6.09	533	0.27	22.5	-227	14.9	9.96	1500	" "
1259	6.08	710	0.12	22.5	-223	14.6	10.12	2000	" "
1304	6.11	438	0.07	22.5	-224	14.2	10.28	2500	" "
1309	6.14	484	0.06	22.5	-227	14.8	10.38	3,000	" "
1314	collect sample # 0003-005								
Stability:	± 0.2 units	± 3-5%	± 0.2 mg/L	± 0.3 %	± 20 mV	± 10%			

* pulled pump up 1'

Hach Fe^{2+} NA

Samples were collected directly from pump unless otherwise noted.

LOW-FLOW PURGING AND SAMPLING DATA SHEET

Project Name: UST SITE 14121
Project Number: 2990.0083.00005
Date: 6/1/05
Site Engineer(s): Tanner Turpin-Kessler, Nick Weinberger

Well Number: MW 4
Equipment: QED Sample Pro Mini Bladder Pump
Sample ID: 0003-003 Time: 1105
Contractor: Tetra Tech FW, Inc

Reference: Top of Casing	Before	After
Depth to Water (ft)	7.99	8.61
Depth of Well (ft)	24.07	
Depth to Top of Screen	9.5	
Screen Length (ft)	15'	
Pump depth (ft)	(TK) 16 ~~19~~'	
Pump Rate	100 ml/min	
Sample Pump Rate	100 ml/min	
System Volume	~530 ml	

Total Volume Purged (mL): 2,500 mL

Notes/Calcs:
(2.4 * 25) + 470 = 530
System Vol (mL) = (2.4*H)+470
where
2.4mL/ft = tubing volume per foot (1/8"ID)
H = length of tubing in feet
470 mL = Bladder volume + Flowthru cell volume

Time	pH	Conductivity (µmhos)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Cum. Volume (mL)	Comments
1036									PUMP ON SET RATE
1041	6.00	9380	1.23	23.0	209	2.4	8.27	500	100mL/min
1046	6.02	10,600	0.33	23.0	173	0.0	8.37	1000	
1051	6.04	15,200	0.23	23.0	162	0.0	8.50	1500	
1056	6.05	14,800	0.20	23.0	153	0.0	8.54	2,000	
1101	6.06	14,400	0.17	23.0	151	0.0	8.61	2,500	
1105	Collect Sample		0003-003						
Stability:	± 0.2 units	± 3-5%	± 0.2 mg/L	± 0.3 %	± 20 mV	± 10%			

Hach Fe^{2+} NA

Samples were collected directly from pump unless otherwise noted.

APPENDIX B

NON-HAZARDOUS WASTE MANIFEST

NON-HAZARDOUS WASTE MANIFEST

WO# 055695

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CA2170023533

Manifest Document No. 51160

2. Page 1 of 1

3. Generator's Name and Mailing Address
Foster Wheeler
Tetra Tech EM, Inc. 1230 Columbia Street Suite 500
San Diego, CA 92101 5417 Attn: Kate Dalston

4. Generator's Phone ( )

5. Transporter 1 Company Name: General Environmental Mgmt Inc.

6. US EPA ID Number: CAD982364980

A. State Transporter's ID

B. Transporter 1 Phone: 800-326-1011

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
DK Environmental
5650 East 26th Street
Vernon, CA 90023

10. US EPA ID Number: CAT080033681

E. State Facility's ID

F. Facility's Phone: 323-268-5056

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non hazardous liquid (Well Water)	5	DM	EST. 275	G
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
(1a) 5x55g-Well Water-Approval#340901-24
UST SITES 14121, 14125, 1133, 43522 & 21062

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Emergency Phone: (800) 326-1011 (G.E.M.)
PO#055946

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Kate Dalston

Signature

Date: Month Day Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Jose Tapia

Signature

Date: Month 7 Day 22 Year 05

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

Signature

Date: Month Day Year

APPENDIX C

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORMS

FOSTER WHEELER ENVIRONMENTAL CORPORATION
1230 Columbia Street, Suite 640 San Diego, CA 92101 (619) 234-8696

NUMBER 06593

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: UST SITE 14121	PURCHASE ORDER NO.: 055850
PROJECT LOCATION: CAMP PENDLETON	PROJECT NO.: 2010.0003.0004.0000
SAMPLER NAME: Tania Turpin-Kearsley	SAMPLER SIGNATURE: [signature]
PROJECT CONTACT: Sonia Allison	AIRBILL NUMBER: COURIER

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 05F010

ANALYSES REQUIRED: * EPA 8021B (BTEX/MTBE); EPA 8015B TPH-G; EPA 8270C PAHs; EPA 8015B TPH-D

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	EPA 8021B	EPA 8015B TPH-G	EPA 8270C PAHs	EPA 8015B TPH-D	COMMENTS
0003-001	6/1/05	0945	3	X		W	10 day	X				
0003-002	6/1/05	1000	8	X		W	10 day	X	X	X		
0003-003	6/1/05	1105	8	X		W	10 day	X	X	X	X	
0003-004	6/1/05	1212	8	X		W	10 day	X	X	X	X	
0003-005	6/1/05	1314	8	X		W	10 day	X	X	X	X	
0003-006	6/1/05	1415	8		X	W	10 day	X	X	X	X	
0003-007	6/1/05	1420	8	X		W	10 day	X	X	X	X	

END 6/1/05

Project Information Section
Do not submit to Laboratory

LOCATION	DEPTH START	DEPTH END	QC
TRIP BLANK 14121	–	–	TB
EQUIP RINS 14121	–	–	ER
14121-MW4	–	–	REG
14121-MW2	–	–	REG
14121-MW3	–	–	REG
14121-MW1	–	–	REG
14121-MW1	–	–	FD

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	6/1/05	[signature]
COMPANY: ~~FW~~ SCS-TECH	TIME: 1606	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * All detections of MTBE to be confirmed by EPA 5030B/8260B

COMPOSITE DESCRIPTION

SAMPLING COMMENT: QUARTERLY GW SAMPLING

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: ______ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

EMAX LABORATORIES, INC.

COPY

TABLE OF CONTENTS

CLIENT: **SES-TECH**

PROJECT: **CAMP PENDLETON, UST SITE 14121**

SDG: **05F010**

** - Not Requested

EMAX LABORATORIES, INC. 1835 W. 205th Street, Torrance, CA 90501 Tel: (310) 618-8889 Fax: (310) 618-0818

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 06-16-2005
EMAX Batch No.: 05F010

Attn: Sevda Aleckson

SES-TECH
1940 E. Deere Avenue, Suite 200
Santa Ana CA 92705

Subject: Laboratory Report
Project: Camp Pendleton, UST Site 14121

Enclosed is the Laboratory report for samples received on 06/01/05. The data reported include :

Sample ID	Control #	Col Date	Matrix	Analysis
0003-001	F010-01	06/01/05	WATER	BTEX & MTBE
0003-002	F010-02	06/01/05	WATER	SEMIVOLATILE ORGANICS SIM
				TPH DIESEL
				BTEX & MTBE
0003-003	F010-03	06/01/05	WATER	SEMIVOLATILE ORGANICS SIM
				TPH DIESEL
				TPH GASOLINE
				BTEX & MTBE
0003-004	F010-04	06/01/05	WATER	SEMIVOLATILE ORGANICS SIM
				TPH DIESEL
				TPH GASOLINE
				BTEX & MTBE
0003-005	F010-05	06/01/05	WATER	SEMIVOLATILE ORGANICS SIM
				TPH DIESEL
				TPH GASOLINE
				BTEX & MTBE
0003-006	F010-06	06/01/05	WATER	SEMIVOLATILE ORGANICS SIM
				TPH DIESEL
				TPH GASOLINE

EMAX LABORATORIES, INC.

Sample ID	Control #	Col Date	Matrix	Analysis
				BTEX & MTBE
0003-007	F010-07	06/01/05	WATER	SEMIVOLATILE ORGANICS SIM
				TPH DIESEL
				TPH GASOLINE
				BTEX & MTBE

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Kam Y. Pang, Ph.D.
Laboratory Director

FOSTER WHEELER ENVIRONMENTAL CORPORATION

1230 Columbia Street, Suite 640 San Diego, CA 92101 (619) 234-8696

NUMBER 06593

J3 | VLN 1-27

CHAIN-OF-CUSTODY RECORD

05F010

PROJECT NAME	PURCHASE ORDER NO.
UST SITE 14121	055850
PROJECT LOCATION	PROJECT NO.
CAMP PENDLETON	2990.0003.0004.0000
SAMPLER NAME	SAMPLER SIGNATURE
TANIA TURPIN-KEASLER	
PROJECT CONTACT	AIRBILL NUMBER
SEVDA ALECKSON	COURIER

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	EPA 8021B BDE/MTBE *	EPA 8015B TPH-d	EPA 8270C PAHs	EPA 8015B TPH-g	ANALYSES REQUIRED
1	0003-001	6/1/05	0945	3	X		W	10 day	X				
2	0003-002	6/1/05	1000	8	X		W	10 day	X	X	X		
3	0003-003	6/1/05	1105	8	X		W	10 day	X	X	X	X	
4	0003-004	6/1/05	1212	8	X		W	10 day	X	X	X	X	
5	0003-005	6/1/05	1314	8	X		W	10 day	X	X	X	X	
6	0003-006	6/1/05	1415	8		X	W	10 day	X	X	X	X	
7	0003-007	6/1/05	1420	8	X		W	10 day	X	X	X	X	

END 6/1/05 TK

TK 6/1/05

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
	6/1/05	
COMPANY	TIME	COMPANY
TETRA TECH	1606	EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
	6-1-05	
COMPANY	TIME	COMPANY
EMAX	1750	EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 05F010

COMMENTS

LABORATORY INSTRUCTIONS/COMMENTS

* ALL DETECTIONS OF MTBE TO BE CONFIRMED BY EPA 5030B/8260B

COMPOSITE DESCRIPTION: 1002

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)

TEMPERATURE: 3-8°C+2.5°C SAMPLE CONDITION: ☑ INTACT ☐ BROKEN

COOLER SEAL: ☑ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

EMAX LABORATORIES, INC.

EMAX LABORATORIES, INC.

EMAX-SM02
Rev 3
Appendix 2

SAMPLE RECEIPT FORM 1

Type of Delivery	Delivered By/Airbill		
☑ EMAX Courier	PHIL HATCHER	ECN	05F010
☐ Client Delivery		Recepient	I. PATEL
☐ Third Party		Date	06-01-05
		Time	18:60

COC Inspection

☑ Client Name	☑ Sampler Name	☐ Sampling Date/Time/Location
☐ Address	☐ Courier Signature/Date/Time	☐ Analysis Required
☐ Client PM/FC	☐ TAT	☐ Matrix
☑ Tel #/Fax #	☐ Sample ID	☐ Preservative (if any)
Safety Issues ☐ None	☐ High Concentrations expected	☐ Superfund Site Samples
Comments: ☐ Rad Screening Required		

Packaging Inspection

Container	☐ Coolers (2)	☐ Box	☐	☐
Condition	☐ Custody Seal	☐ Intact	☐ Damaged	☐
Packaging	☑ Bubble Pack	☐ Styrofoam	☑ Sufficient	☐ PLASTIC BAG
Temperatures	☑ Cooler 1 T-3.8°C	☑ Cooler 2 T-2.5°C	☐ Cooler 3 ____	☐ Cooler 4 ____
	☐ Cooler 5 ____	☐ Cooler 6 ____	☐ Cooler 7 ____	☐ Cooler 8 ____
	☐ Cooler 9 ____	☐ Cooler 10 ____	☐ Cooler 11 ____	☐ Cooler 12 ____

Comments:

LSCID	Client ID	Discrepancy	Corrective Action
- 05 - 0283 1	0003- 005	NO TIME ON LABELS	

LSCID : Lab Sample Container ID

REVIEWS

Sample Labeling ____ Date 6-01-05

SRF ____ Date 6/2/05

PM ____ for RB Date 6/3/05

1-03

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

EMAX LABORATORIES, INC.

LABORATORY REPORT FOR

SES-TECH

CAMP PENDLETON, UST SITE 14121

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

SDG#: 05F010

3000

EMAX LABORATORIES, INC.

CASE NARRATIVE

CLIENT: SES-TECH

PROJECT: CAMP PENDLETON, UST SITE 14121

SDG: 05F010

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Six (6) water samples were received on 06/01/05 for Semi Volatile Organic analysis by Method 3520C/8270C SIM in accordance with USEPA SW846, 3rd ed.

1. **Holding Time**

   Analytical holding time was met.

2. **Tuning and Calibration**

   Tuning and calibration were carried out at 12-hour interval. All QC requirements were met.

3. **Method Blank**

   Method blank was free of contamination at half of the reporting limit.

4. **Surrogate Recovery**

   Recoveries were within QC limit.

5. **Lab Control Sample/Lab Control Sample Duplicate**

   Recoveries were within QC limit except two analytes in LCS1W were slightly below QC but met QC in duplicate analysis.

6. **Matrix Spike/Matrix Spike Duplicate**

   No MS/MSD sample was designated in this SDG.

7. **Sample Analysis**

   Samples were analyzed according to the prescribed QC procedures. All criteria were met with the aforementioned exception.

LAB CHRONICLE
SEMI VOLATILE ORGANICS BY GC/MS

Client : SES-TECH
Project : CAMP PENDLETON, UST SITE 14121

SDG NO. : 05F010
Instrument ID : T-052

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVF009WB	1	NA	06/08/0520:01	06/06/0515:00	RFK204	RDK196	SVF009W	Method Blank
LCS1W	SVF009WL	1	NA	06/08/0520:23	06/06/0515:00	RFK205	RDK196	SVF009W	Lab Control Sample (LCS)
LCD1W	SVF009WC	1	NA	06/08/0520:44	06/06/0515:00	RFK206	RDK196	SVF009W	LCS Duplicate
0003-002	F010-02	.95	NA	06/08/0521:49	06/06/0515:00	RFK209	RDK196	SVF009W	Field Sample
0003-003	F010-03	.95	NA	06/08/0522:11	06/06/0515:00	RFK210	RDK196	SVF009W	Field Sample
0003-004	F010-04	.95	NA	06/08/0522:32	06/06/0515:00	RFK211	RDK196	SVF009W	Field Sample
0003-005	F010-05	.94	NA	06/08/0522:54	06/06/0515:00	RFK212	RDK196	SVF009W	Field Sample
0003-006	F010-06	.95	NA	06/08/0523:15	06/06/0515:00	RFK213	RDK196	SVF009W	Field Sample
0003-007	F010-07	.99	NA	06/08/0523:37	06/06/0515:00	RFK214	RDK196	SVF009W	Field Sample

FN - Filename
% Moist - Percent Moisture

EMAX
LABORATORIES, INC.

SAMPLE RESULTS

3003

EMAX LABORATORIES, INC.

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client : SES-TECH	Date Collected: 06/01/05
Project : CAMP PENDLETON, UST SITE 14121	Date Received: 06/01/05
Batch No. : 05F010	Date Extracted: 06/06/05 15:00
Sample ID: 0003-002	Date Analyzed: 06/08/05 21:49
Lab Samp ID: F010-02	Dilution Factor: .95
Lab File ID: RFK209	Matrix : WATER
Ext Btch ID: SVF009W	% Moisture : NA
Calib. Ref.: RDK196	Instrument ID : T-052

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ACENAPHTHENE	ND	.95	.19
ACENAPHTHYLENE	ND	.95	.19
ANTHRACENE	ND	1.9	.19
BENZO(A)ANTHRACENE	ND	1.9	.19
BENZO(A)PYRENE	ND	.95	.19
BENZO(B)FLUORANTHENE	ND	.95	.19
BENZO(K)FLUORANTHENE	ND	1.9	.19
BENZO(G,H,I)PERYLENE	ND	.95	.19
CHRYSENE	ND	1.9	.19
DIBENZO(A,H)ANTHRACENE	ND	.95	.19
FLUORANTHENE	ND	1.9	.19
FLUORENE	ND	1.9	.19
INDENO(1,2,3-CD)PYRENE	ND	.95	.19
NAPHTHALENE	ND	.95	.19
PHENANTHRENE	ND	.95	.19
PYRENE	ND	1.9	.19

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	70	50-130

RL: Reporting Limit

EMAX LABORATORIES, INC.

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/06/05 15:00
Sample ID:	0003-003	Date Analyzed:	06/08/05 22:11
Lab Samp ID:	F010-03	Dilution Factor:	.95
Lab File ID:	RFK210	Matrix :	WATER
Ext Btch ID:	SVF009W	% Moisture :	NA
Calib. Ref.:	RDK196	Instrument ID :	T-052

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ACENAPHTHENE	ND	.95	.19
ACENAPHTHYLENE	ND	.95	.19
ANTHRACENE	ND	1.9	.19
BENZO(A)ANTHRACENE	ND	1.9	.19
BENZO(A)PYRENE	ND	.95	.19
BENZO(B)FLUORANTHENE	ND	.95	.19
BENZO(K)FLUORANTHENE	ND	1.9	.19
BENZO(G,H,I)PERYLENE	ND	.95	.19
CHRYSENE	ND	1.9	.19
DIBENZO(A,H)ANTHRACENE	ND	.95	.19
FLUORANTHENE	ND	1.9	.19
FLUORENE	ND	1.9	.19
INDENO(1,2,3-CD)PYRENE	ND	.95	.19
NAPHTHALENE	ND	.95	.19
PHENANTHRENE	ND	.95	.19
PYRENE	ND	1.9	.19

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	67	50-130

RL: Reporting Limit

EMAX LABORATORIES, INC.

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client : SES-TECH	Date Collected: 06/01/05
Project : CAMP PENDLETON, UST SITE 14121	Date Received: 06/01/05
Batch No. : 05F010	Date Extracted: 06/06/05 15:00
Sample ID: 0003-004	Date Analyzed: 06/08/05 22:32
Lab Samp ID: F010-04	Dilution Factor: .95
Lab File ID: RFK211	Matrix : WATER
Ext Btch ID: SVF009W	% Moisture : NA
Calib. Ref.: RDK196	Instrument ID : T-052

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ACENAPHTHENE	ND	.95	.19
ACENAPHTHYLENE	ND	.95	.19
ANTHRACENE	ND	1.9	.19
BENZO(A)ANTHRACENE	ND	1.9	.19
BENZO(A)PYRENE	ND	.95	.19
BENZO(B)FLUORANTHENE	ND	.95	.19
BENZO(K)FLUORANTHENE	ND	1.9	.19
BENZO(G,H,I)PERYLENE	ND	.95	.19
CHRYSENE	ND	1.9	.19
DIBENZO(A,H)ANTHRACENE	ND	.95	.19
FLUORANTHENE	ND	1.9	.19
FLUORENE	ND	1.9	.19
INDENO(1,2,3-CD)PYRENE	ND	.95	.19
NAPHTHALENE	ND	.95	.19
PHENANTHRENE	ND	.95	.19
PYRENE	ND	1.9	.19

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	59	50-130

RL: Reporting Limit

EMAX LABORATORIES, INC.

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client : SES-TECH	Date Collected: 06/01/05
Project : CAMP PENDLETON, UST SITE 14121	Date Received: 06/01/05
Batch No. : 05F010	Date Extracted: 06/06/05 15:00
Sample ID: 0003-005	Date Analyzed: 06/08/05 22:54
Lab Samp ID: F010-05	Dilution Factor: .94
Lab File ID: RFK212	Matrix : WATER
Ext Btch ID: SVF009W	% Moisture : NA
Calib. Ref.: RDK196	Instrument ID : T-052

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ACENAPHTHENE	ND	.94	.19
ACENAPHTHYLENE	ND	.94	.19
ANTHRACENE	ND	1.9	.19
BENZO(A)ANTHRACENE	ND	1.9	.19
BENZO(A)PYRENE	ND	.94	.19
BENZO(B)FLUORANTHENE	ND	.94	.19
BENZO(K)FLUORANTHENE	ND	1.9	.19
BENZO(G,H,I)PERYLENE	ND	.94	.19
CHRYSENE	ND	1.9	.19
DIBENZO(A,H)ANTHRACENE	ND	.94	.19
FLUORANTHENE	ND	1.9	.19
FLUORENE	ND	1.9	.19
INDENO(1,2,3-CD)PYRENE	ND	.94	.19
NAPHTHALENE	ND	.94	.19
PHENANTHRENE	ND	.94	.19
PYRENE	ND	1.9	.19

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	61	50-130

RL: Reporting Limit

EMAX LABORATORIES, INC.

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/06/05 15:00
Sample ID:	0003-006	Date Analyzed:	06/08/05 23:15
Lab Samp ID:	F010-06	Dilution Factor:	.95
Lab File ID:	RFK213	Matrix :	WATER
Ext Btch ID:	SVF009W	% Moisture :	NA
Calib. Ref.:	RDK196	Instrument ID :	T-052

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ACENAPHTHENE	1	.95	.19
ACENAPHTHYLENE	.27J	.95	.19
ANTHRACENE	ND	1.9	.19
BENZO(A)ANTHRACENE	ND	1.9	.19
BENZO(A)PYRENE	ND	.95	.19
BENZO(B)FLUORANTHENE	ND	.95	.19
BENZO(K)FLUORANTHENE	ND	1.9	.19
BENZO(G,H,I)PERYLENE	ND	.95	.19
CHRYSENE	ND	1.9	.19
DIBENZO(A,H)ANTHRACENE	ND	.95	.19
FLUORANTHENE	ND	1.9	.19
FLUORENE	.36J	1.9	.19
INDENO(1,2,3-CD)PYRENE	ND	.95	.19
NAPHTHALENE	ND	.95	.19
PHENANTHRENE	ND	.95	.19
PYRENE	ND	1.9	.19

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	67	50-130

RL: Reporting Limit

EMAX LABORATORIES, INC.

Quantitation Report (QT Reviewed)

Data File : D:\CHEMDATA\05F08\RFK213.D
Acq On : 8 JUN 2005 23:15
Sample : 05F010-06
Misc :
MS Integration Params: RTEINT.P
Quant Time: Jun 9 12:30 2005

Vial: 15
Operator: KV
Inst : TO52
Multiplr: 1.00
Quant Results File: SV52D26.RES

Quant Method : C:\HPCHEM\1\METHODS\SV52D26.M (RTE Integrator)
Title : METHOD 8270C SIM GCMS-QP5000
Last Update : Wed Apr 27 16:16:37 2005
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	3.28	152	441906	10.00 ng	0.00
18) Phenanthrene-d10	8.03	188	726805	10.00 ng	-0.02
26) Perylene-d12	12.39	264	508419	10.00 ng	0.00
System Monitoring Compounds					
25) Terphenyl-d14	9.83	244	374941	6.71 ng	0.00
Target Compounds					Qvalue
11) 2-Methylnaphthalene	5.38	142	49181	0.47 ng	93
14) Acenaphthylene	6.25	152	40654m	0.29 ng	
15) Acenaphthene	6.43	154	89852	1.08 ng	95
16) Fluorene	7.00	166	32707m	0.37 ng	
21) Phenanthrene	8.06	178	12379m	0.10 ng	

AV 6/9/05

(#) = qualifier out of range (m) = manual integration
RFK213.D SV52D26.M Thu Jun 09 12:30:56 2005 TO52

3009

EMAX LABORATORIES, INC

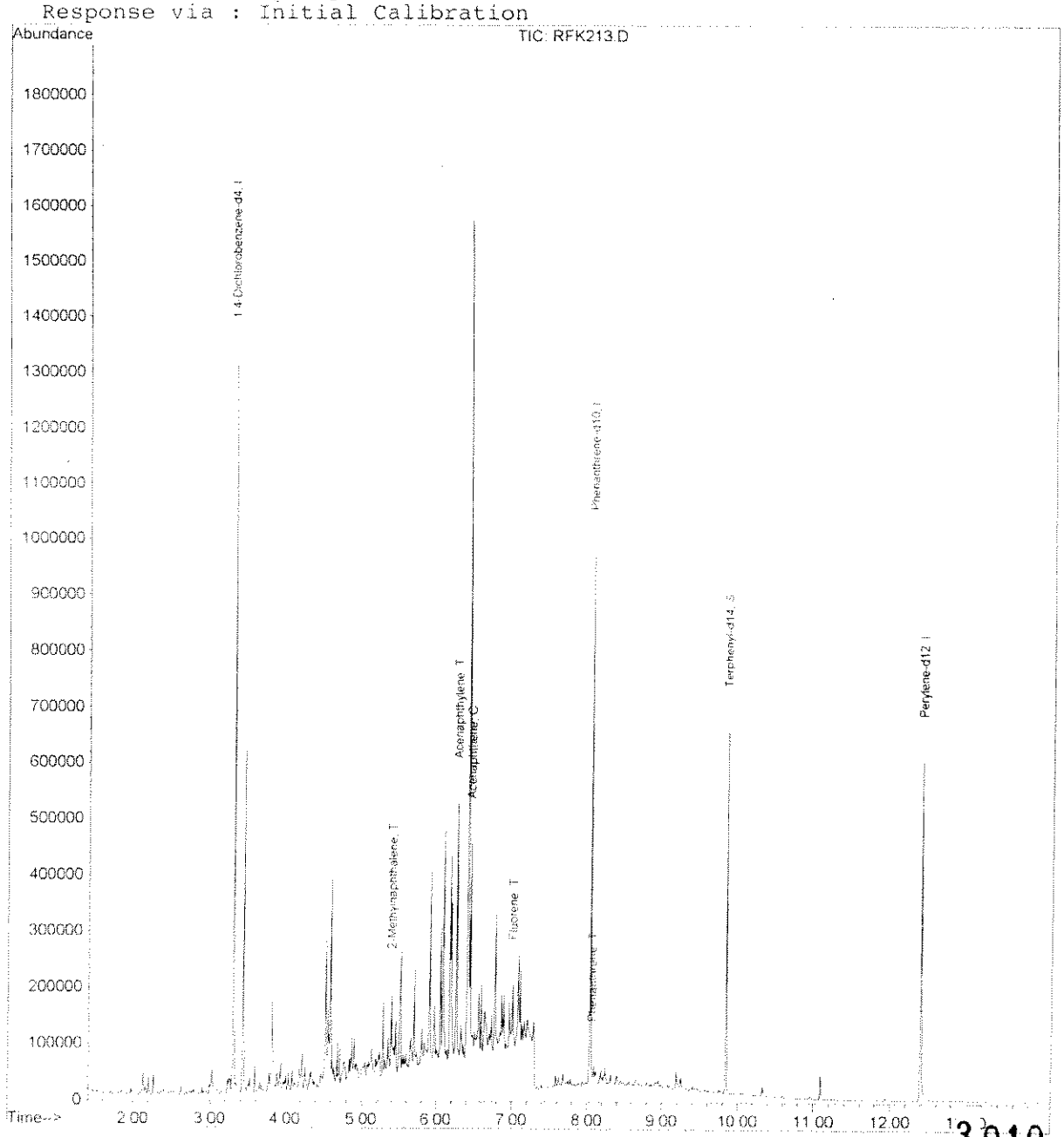
Quantitation Report

Data File : D:\CHEMDATA\05F08\RFK213.D
Acq On : 8 JUN 2005 23:15
Sample : 05F010-06
Misc :
MS Integration Params: RTEINT.P
Quant Time: Jun 9 12:30 2005

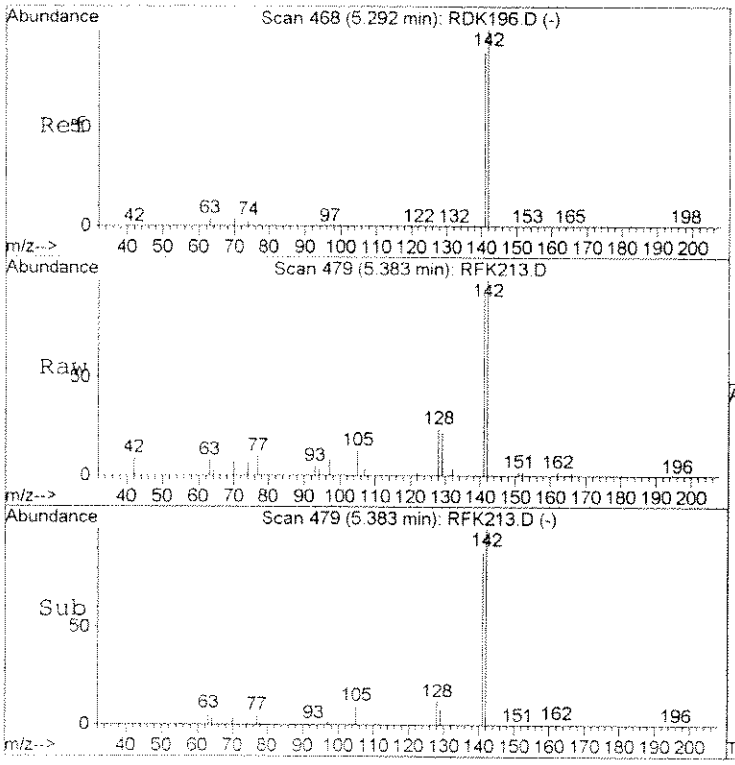
Vial: 15
Operator: KV
Inst : TO52
Multiplr: 1.00

Quant Results File: SV52D26.RES

Method : C:\HPCHEM\1\METHODS\SV52D26.M (RTE Integrator)
Title : METHOD 8270C SIM GCMS-QP5000
Last Update : Wed Apr 27 16:16:37 2005
Response via : Initial Calibration



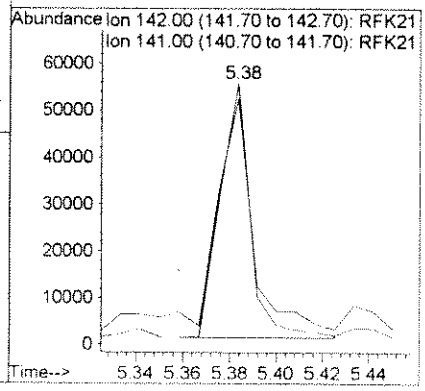
3010

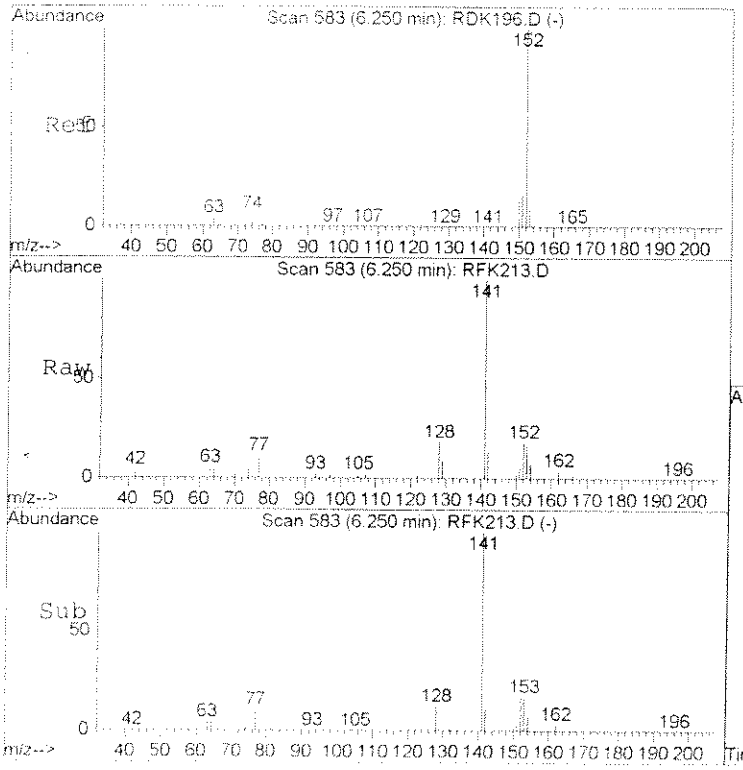


#11
2-Methylnaphthalene
Concen: 0.47 ng
RT: 5.38 min Scan# 479
Delta R.T. 0.09 min
Lab File: RFK213.D
Acq: 8 JUN 2005 23:15

Tgt Ion:142 Resp: 49181

Ion	Ratio	Lower	Upper
142	100		
141	93.9	57.7	117.7

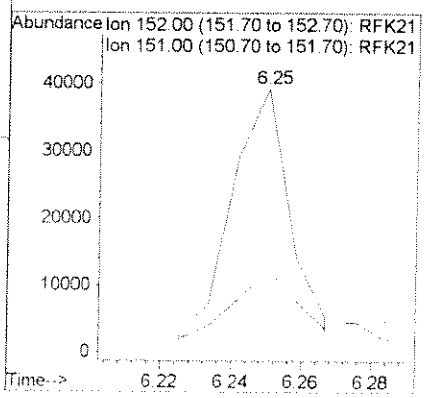


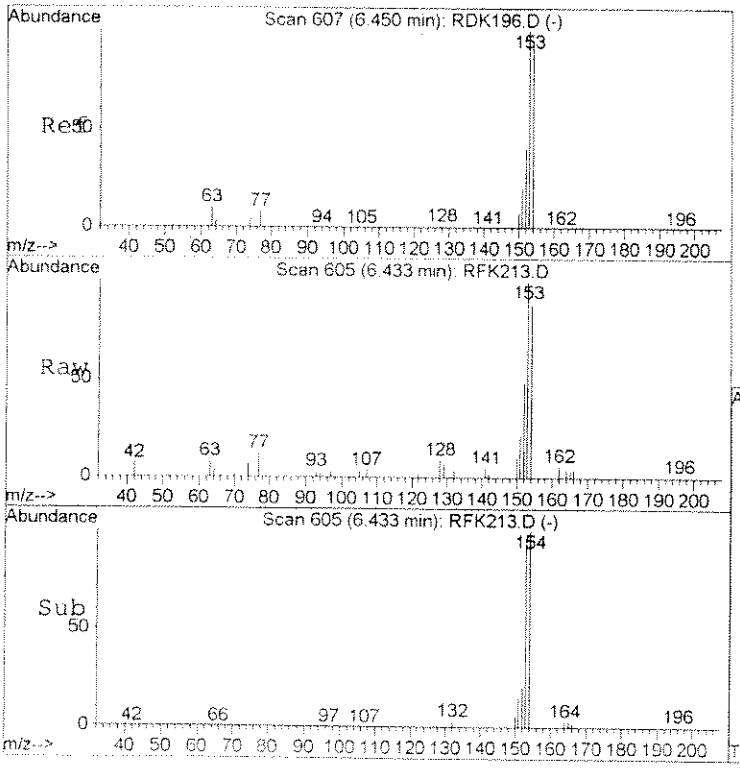


#14
Acenaphthylene
Concen: 0.29 ng m
RT: 6.25 min Scan# 583
Delta R.T. 0.00 min
Lab File: RFK213.D
Acq: 8 JUN 2005 23:15

Tgt Ion:152 Resp: 40654

Ion	Ratio	Lower	Upper
152	100		
151	31.7	0.0	46.1

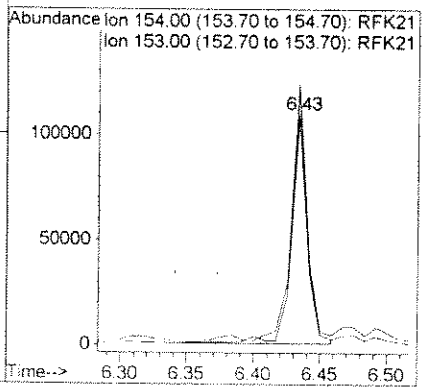


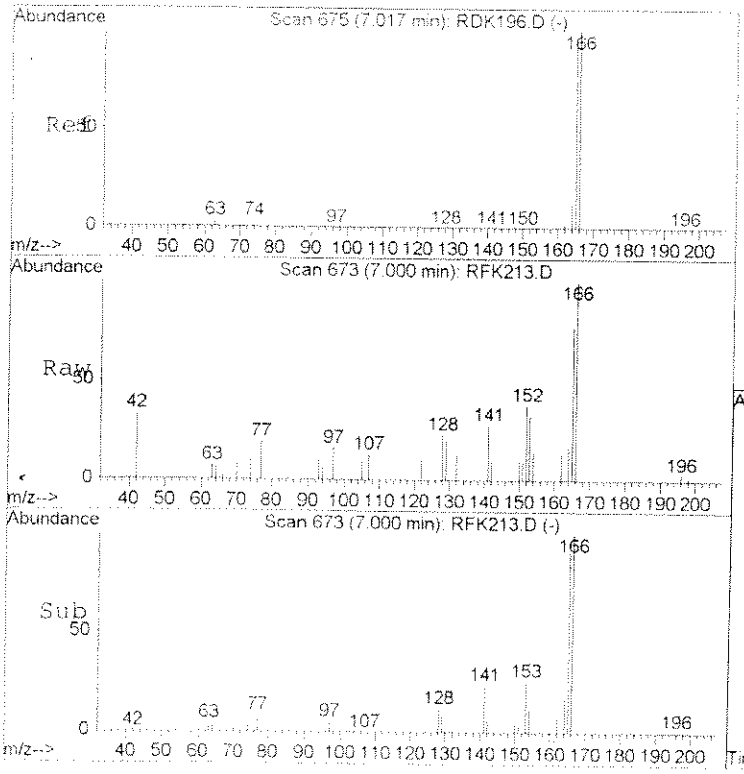


#15
Acenaphthene
Concen: 1.08 ng
RT: 6.43 min Scan# 605
Delta R.T. -0.02 min
Lab File: RFK213.D
Acq: 8 JUN 2005 23:15

Tgt Ion:154 Resp: 89852

Ion	Ratio	Lower	Upper
154	100		
153	113.3	78.5	138.5

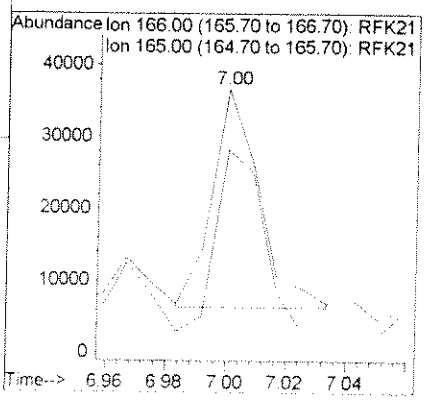


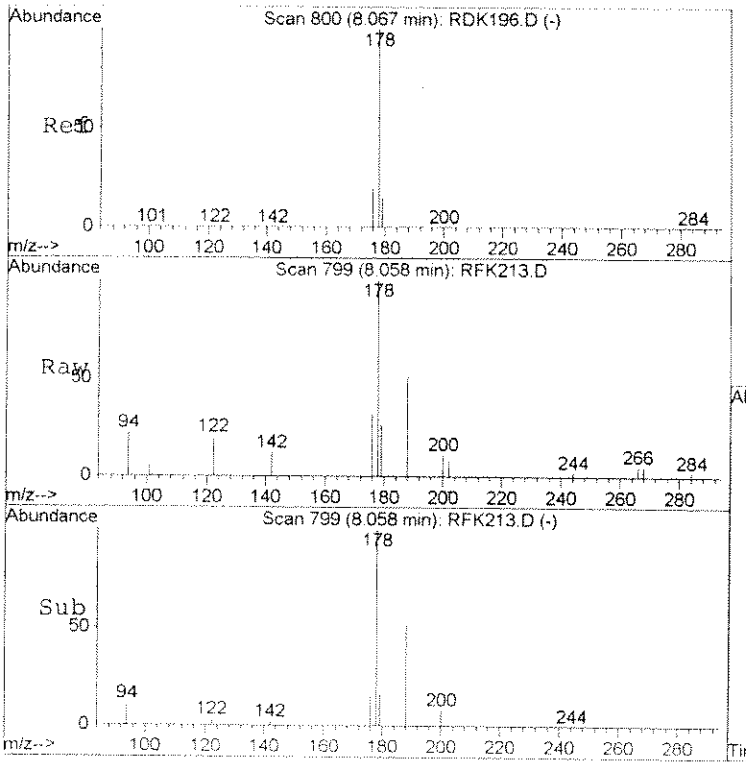


#16
Fluorene
Concen: 0.37 ng m
RT: 7.00 min Scan# 673
Delta R.T. -0.02 min
Lab File: RFK213.D
Acq: 8 JUN 2005 23:15

Tgt Ion:166 Resp: 32707

Ion	Ratio	Lower	Upper
166	100		
165	77.0	64.4	124.4

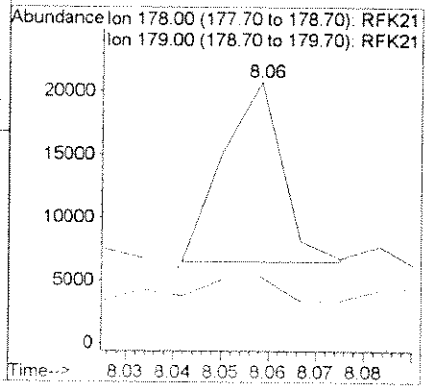




#21
Phenanthrene
Concen: 0.10 ng m
RT: 8.06 min Scan# 799
Delta R.T. -0.01 min
Lab File: RFK213.D
Acq: 8 JUN 2005 23:15

Tgt Ion:178 Resp: 12379

Ion	Ratio	Lower	Upper
178	100		
179	25.5	0.0	45.3



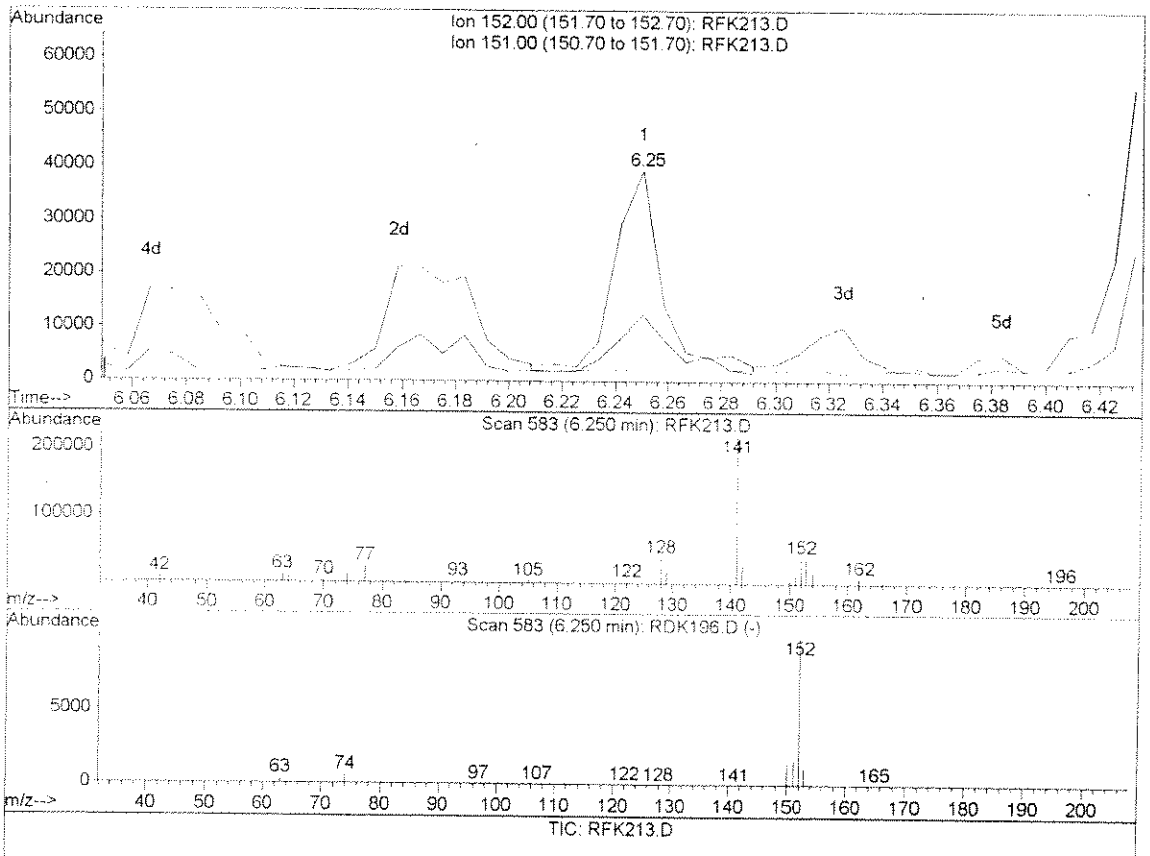
EMAX LABORATORIES, INC.

Quantitation Report

Data File : D:\CHEMDATA\05F08\RFK213.D
Acq On : 8 JUN 2005 23:15
Sample : 05F010-06
Misc :
Quant Time: Jun 9 12:25 2005

Vial: 15
Operator: KV
Inst : TO52
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\SV52D26.M (RTE Integrator)
Title : METHOD 8270C SIM GCMS-QP5000
Last Update : Wed Apr 27 16:16:37 2005
Response via : Multiple Level Calibration



(14) Acenaphthylene (T)

6.25min 0.33ng

response 46399

Ion	Exp%	Act%
152.00	100	100
151.00	16.10	31.74
0.00	0.00	0.00
0.00	0.00	0.00

3014

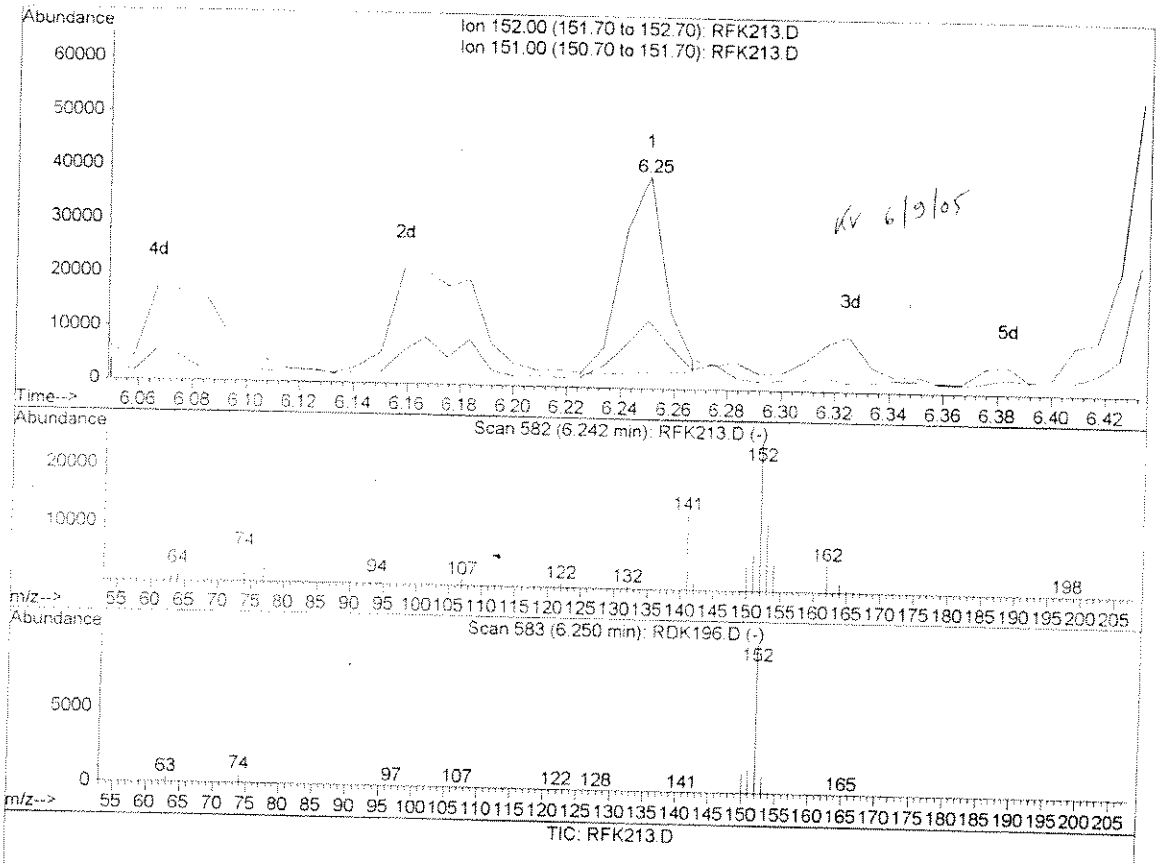
EMAX LABORATORIES, INC.

Quantitation Report

Data File : D:\CHEMDATA\05F08\RFK213.D
Acq On : 8 JUN 2005 23:15
Sample : 05F010-06
Misc :
Quant Time: Jun 9 12:29 2005

Vial: 15
Operator: KV
Inst : TO52
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\SV52D26.M (RTE Integrator)
Title : METHOD 8270C SIM GCMS-QP5000
Last Update : Wed Apr 27 16:16:37 2005
Response via : Multiple Level Calibration



(14) Acenaphthylene (T)

6.25min 0.29ng m

response 40654

Ion	Exp%	Act%
152.00	100	100
151.00	16.10	31.74
0.00	0.00	0.00
0.00	0.00	0.00

3015

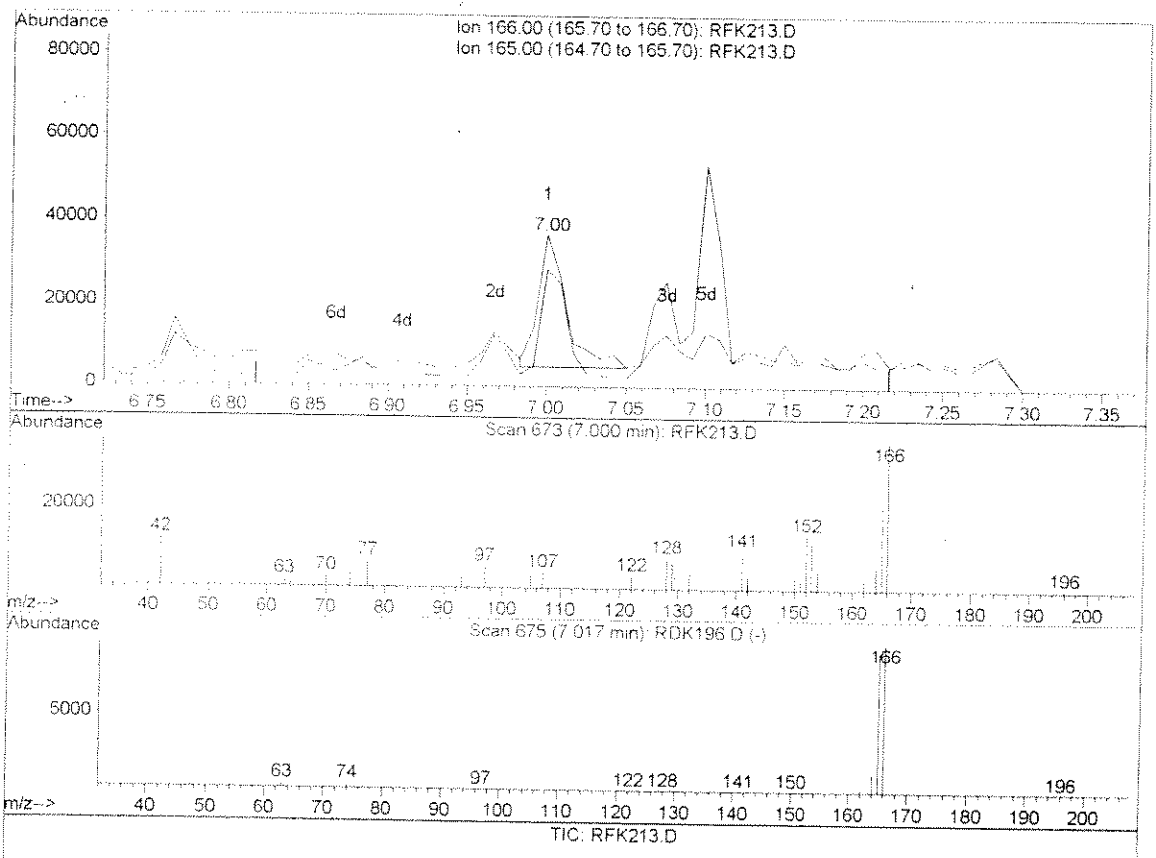
EMAX

Quantitation Report

Data File : D:\CHEMDATA\05F08\RFK213.D
Acq On : 8 JUN 2005 23:15
Sample : 05F010-06
Misc :
Quant Time: Jun 9 12:29 2005

Vial: 15
Operator: KV
Inst : TO52
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\SV52D26.M (RTE Integrator)
Title : METHOD 8270C SIM GCMS-QP5000
Last Update : Wed Apr 27 16:16:37 2005
Response via : Multiple Level Calibration



(16) Fluorene (T)

7.00min 0.44ng

response 38820

Ion	Exp%	Act%
166.00	100	100
165.00	94.40	77.00
0.00	0.00	0.00
0.00	0.00	0.00

3016

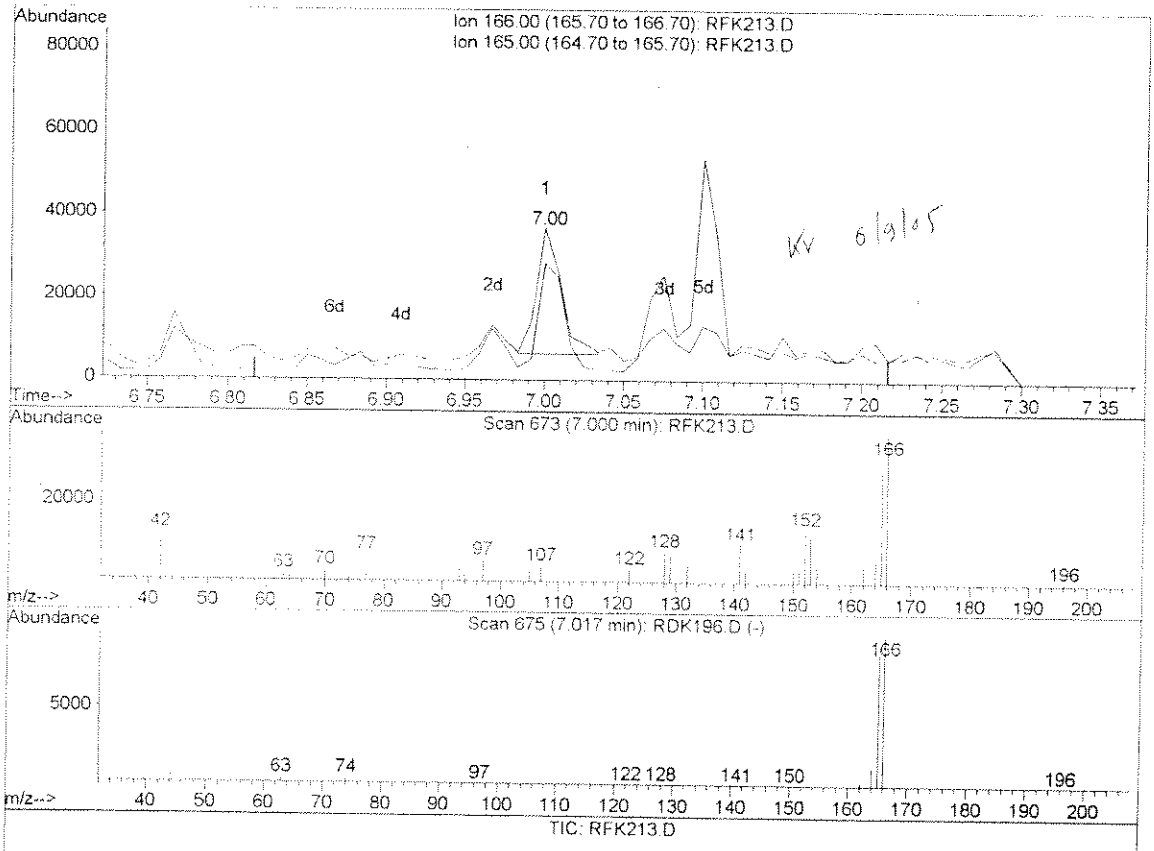
EMAX LABORATORIES, INC.

Quantitation Report

Data File : D:\CHEMDATA\05F08\RFK213.D
Acq On : 8 JUN 2005 23:15
Sample : 05F010-06
Misc :
Quant Time: Jun 9 12:30 2005

Vial: 15
Operator: KV
Inst : TO52
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\SV52D26.M (RTE Integrator)
Title : METHOD 8270C SIM GCMS-QP5000
Last Update : Wed Apr 27 16:16:37 2005
Response via : Multiple Level Calibration



(16) Fluorene (T)

7.00min 0.37ng m

response 32707

Ion	Exp%	Act%
166.00	100	100
165.00	94.40	77.00
0.00	0.00	0.00
0.00	0.00	0.00

3017

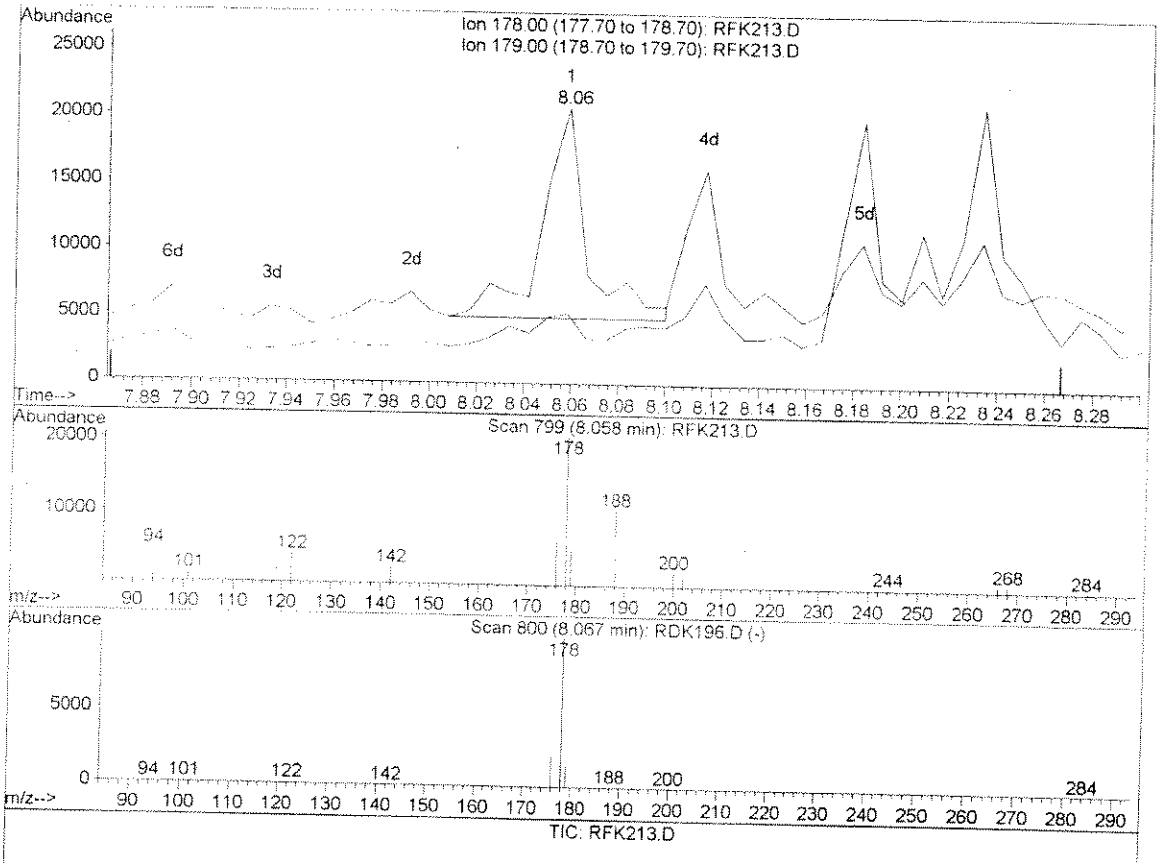
EMAX LABORATORIES, INC.

Quantitation Report

Data File : D:\CHEMDATA\05F08\RFK213.D
Acq On : 8 JUN 2005 23:15
Sample : 05F010-06
Misc :
Quant Time: Jun 9 12:30 2005

Vial: 15
Operator: KV
Inst : TO52
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\SV52D26.M (RTE Integrator)
Title : METHOD 8270C SIM GCMS-QP5000
Last Update : Wed Apr 27 16:16:37 2005
Response via : Multiple Level Calibration



TIC: RFK213.D

(21) Phenanthrene (T)

8.06min 0.17ng

response 21020

Ion	Exp%	Act%
178.00	100	100
179.00	15.30	25.54
0.00	0.00	0.00
0.00	0.00	0.00

3018

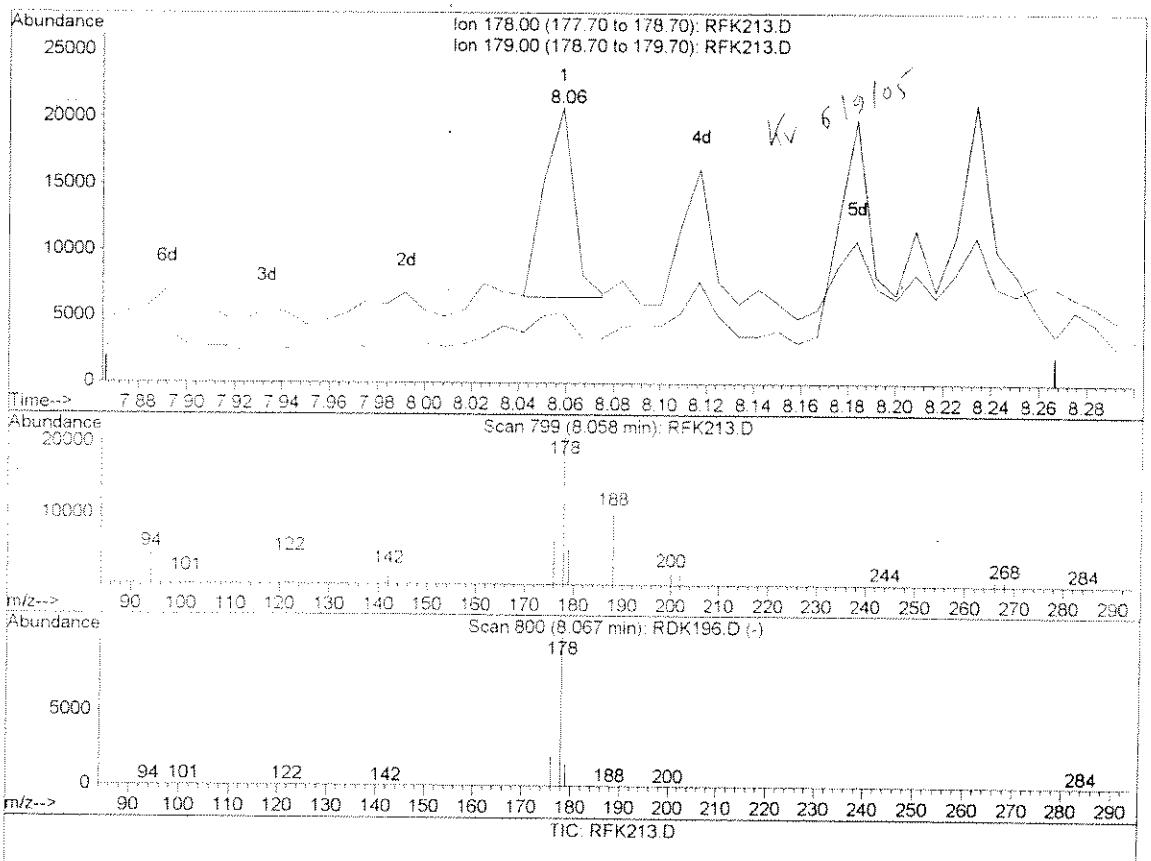
EMAX

Quantitation Report

Data File : D:\CHEMDATA\05F08\RFK213.D
Acq On : 8 JUN 2005 23:15
Sample : 05F010-06
Misc :
Quant Time: Jun 9 12:30 2005

Vial: 15
Operator: KV
Inst : TO52
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\SV52D26.M (RTE Integrator)
Title : METHOD 8270C SIM GCMS-QP5000
Last Update : Wed Apr 27 16:16:37 2005
Response via : Multiple Level Calibration



TIC: RFK213.D

(21) Phenanthrene (T)

8.06min 0.10ng m

response 12379

Ion	Exp%	Act%
178.00	100	100
179.00	15.30	25.54
0.00	0.00	0.00
0.00	0.00	0.00

3019

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client : SES-TECH	Date Collected: 06/01/05
Project : CAMP PENDLETON, UST SITE 14121	Date Received: 06/01/05
Batch No. : 05F010	Date Extracted: 06/06/05 15:00
Sample ID: 0003-007	Date Analyzed: 06/08/05 23:37
Lab Samp ID: F010-07	Dilution Factor: .99
Lab File ID: RFK214	Matrix : WATER
Ext Btch ID: SVF009W	% Moisture : NA
Calib. Ref.: RDK196	Instrument ID : T-052

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ACENAPHTHENE	.88J	.99	.2
ACENAPHTHYLENE	.24J	.99	.2
ANTHRACENE	ND	2	.2
BENZO(A)ANTHRACENE	ND	2	.2
BENZO(A)PYRENE	ND	.99	.2
BENZO(B)FLUORANTHENE	ND	.99	.2
BENZO(K)FLUORANTHENE	ND	2	.2
BENZO(G,H,I)PERYLENE	ND	.99	.2
CHRYSENE	ND	2	.2
DIBENZO(A,H)ANTHRACENE	ND	.99	.2
FLUORANTHENE	ND	2	.2
FLUORENE	.27J	2	.2
INDENO(1,2,3-CD)PYRENE	ND	.99	.2
NAPHTHALENE	ND	.99	.2
PHENANTHRENE	ND	.99	.2
PYRENE	ND	2	.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	60	50-130

RL: Reporting Limit

3020

EMAX
LABORATORIES, INC.

QC SUMMARIES

3021

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client : SES-TECH	Date Collected: NA
Project : CAMP PENDLETON, UST SITE 14121	Date Received: 06/06/05
Batch No. : 05F010	Date Extracted: 06/06/05 15:00
Sample ID: MBLK1W	Date Analyzed: 06/08/05 20:01
Lab Samp ID: SVF009WB	Dilution Factor: 1
Lab File ID: RFK204	Matrix : WATER
Ext Btch ID: SVF009W	% Moisture : NA
Calib. Ref.: RDK196	Instrument ID : T-052

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ACENAPHTHENE	ND	1	.2
ACENAPHTHYLENE	ND	1	.2
ANTHRACENE	ND	2	.2
BENZO(A)ANTHRACENE	ND	2	.2
BENZO(A)PYRENE	ND	1	.2
BENZO(B)FLUORANTHENE	ND	1	.2
BENZO(K)FLUORANTHENE	ND	2	.2
BENZO(G,H,I)PERYLENE	ND	1	.2
CHRYSENE	ND	2	.2
DIBENZO(A,H)ANTHRACENE	ND	1	.2
FLUORANTHENE	ND	2	.2
FLUORENE	ND	2	.2
INDENO(1,2,3-CD)PYRENE	ND	1	.2
NAPHTHALENE	ND	1	.2
PHENANTHRENE	ND	1	.2
PYRENE	ND	2	.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	84	50-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SES-TECH
PROJECT: CAMP PENDLETON, UST SITE 14121
BATCH NO.: 05F010
METHOD: SW 3520C/8270C SIM

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: SVF009WB SVF009WL SVF009WC
LAB FILE ID: RFK204 RFK205 RFK206
DATE EXTRACTED: 06/06/0515:00 06/06/0515:00 06/06/0515:00 DATE COLLECTED: NA
DATE ANALYZED: 06/08/0520:01 06/08/0520:23 06/08/0520:44 DATE RECEIVED: 06/06/05
PREP. BATCH: SVF009W SVF009W SVF009W
CALIB. REF: RDK196 RDK196 RDK196

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Acenaphthene	ND	10	3.64	36*	10	4.79	48	27	40-130	30
Acenaphthylene	ND	10	3.87	39*	10	5.15	51	28	40-130	30
Anthracene	ND	10	5.08	51	10	5.68	57	11	50-130	30
Benzo(a)anthracene	ND	10	6.78	68	10	7.18	72	6	50-130	30
Benzo(a)pyrene	ND	10	7.02	70	10	7.35	74	5	50-130	30
Benzo(b)fluoranthene	ND	10	7.37	74	10	7.54	75	2	50-130	30
Benzo(k)fluoranthene	ND	10	6.9	69	10	7.42	74	7	30-150	30
Benzo(g,h,i)perylene	ND	10	6.36	64	10	6.58	66	3	50-130	30
Chrysene	ND	10	7.32	73	10	7.79	78	6	50-130	30
Dibenzo(a,h)anthracene	ND	10	6.04	60	10	6.3	63	4	40-140	30
Fluoranthene	ND	10	6.02	60	10	6.26	63	4	50-130	30
Fluorene	ND	10	4.3	43	10	5.49	55	24	40-130	30
Indeno(1,2,3-cd)pyrene	ND	10	5.41	54	10	5.76	58	6	30-140	30
Naphthalene	ND	10	3.41	34	10	4.48	45	27	30-130	30
Phenanthrene	ND	10	4.7	47	10	5.39	54	14	40-130	30
Pyrene	ND	10	5.96	60	10	6.32	63	6	40-130	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Terphenyl-d14	10	7.2	72	10	7.06	71	50-130

EMAX LABORATORIES, INC.

LABORATORY REPORT FOR

SES-TECH

CAMP PENDLETON, UST SITE 14121

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS
BY PURGE AND TRAP

SDG#: 05F010

4000

EMAX LABORATORIES, INC.

CASE NARRATIVE

CLIENT:	SES-TECH
PROJECT:	CAMP PENDLETON, UST DITE 14121
SDG:	05F010

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Five (5) water samples were received on 06/01/05 for Total Petroleum Hydrocarbons by Purge and Trap analysis by Method 5030B/M8015 in accordance with SW846 3rd Edition.

1. **Holding Time**

   Analytical holding time was met. Water samples were preserved.

2. **Calibration**

   Initial calibrations were seven points. %RSD's were within 20%. Continuing calibrations were carried out at 12-hour intervals. All recoveries were within 85-115%.

3. **Method Blank**

   Method blank was free of contamination at half of the reporting limit.

4. **Surrogate Recovery**

   All recoveries were within QC limits.

5. **Lab Control Sample/Lab Control Sample Duplicate**

   All recoveries were within QC limits.

6. **Matrix Spike/Matrix Spike Duplicate**

   No sample was spiked.

7. **Sample Analysis**

   Samples were analyzed according to the prescribed QC procedures. All criteria were met. Results were quantified from C_6 to C_{10} using GRO (C_6 - C_{10}) calibration factor.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : SES-TECH
Project : CAMP PENDLETON, UST SITE 14121

SDG NO. : 05F010
Instrument ID : GCT039

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VA39F04B	1	NA	06/06/0513:11	06/06/0513:11	EF06004A	EF06002A	VA39F04	Method Blank
LCS1W	VA39F04L	1	NA	06/06/0513:47	06/06/0513:47	EF06005A	EF06002A	VA39F04	Lab Control Sample (LCS)
LCD1W	VA39F04C	1	NA	06/06/0514:23	06/06/0514:23	EF06006A	EF06002A	VA39F04	LCS Duplicate
0003-003	F010-03	1	NA	06/06/0517:23	06/06/0517:23	EF06011A	EF06002A	VA39F04	Field Sample
0003-004	F010-04	1	NA	06/06/0517:59	06/06/0517:59	EF06012A	EF06002A	VA39F04	Field Sample
0003-005	F010-05	1	NA	06/06/0518:36	06/06/0518:36	EF06013A	EF06002A	VA39F04	Field Sample
0003-006	F010-06	1	NA	06/06/0519:12	06/06/0519:12	EF06014A	EF06002A	VA39F04	Field Sample
0003-007	F010-07	1	NA	06/06/0519:48	06/06/0519:48	EF06015A	EF06002A	VA39F04	Field Sample

FN - Filename
% Moist - Percent Moisture

EMAX LABORATORIES, INC.

SAMPLE RESULTS

4003

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/06/05 17:23
Sample ID	: 0003-003	Date Analyzed:	06/06/05 17:23
Lab Samp ID	: F010-03	Dilution Factor:	1
Lab File ID	: EF06011A	Matrix	: WATER
Ext Btch ID	: VA39F04	% Moisture	: NA
Calib. Ref.	: EF06002A	Instrument ID	: GCT039

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	.05	.02

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	98	65-135

RL : Reporting Limit

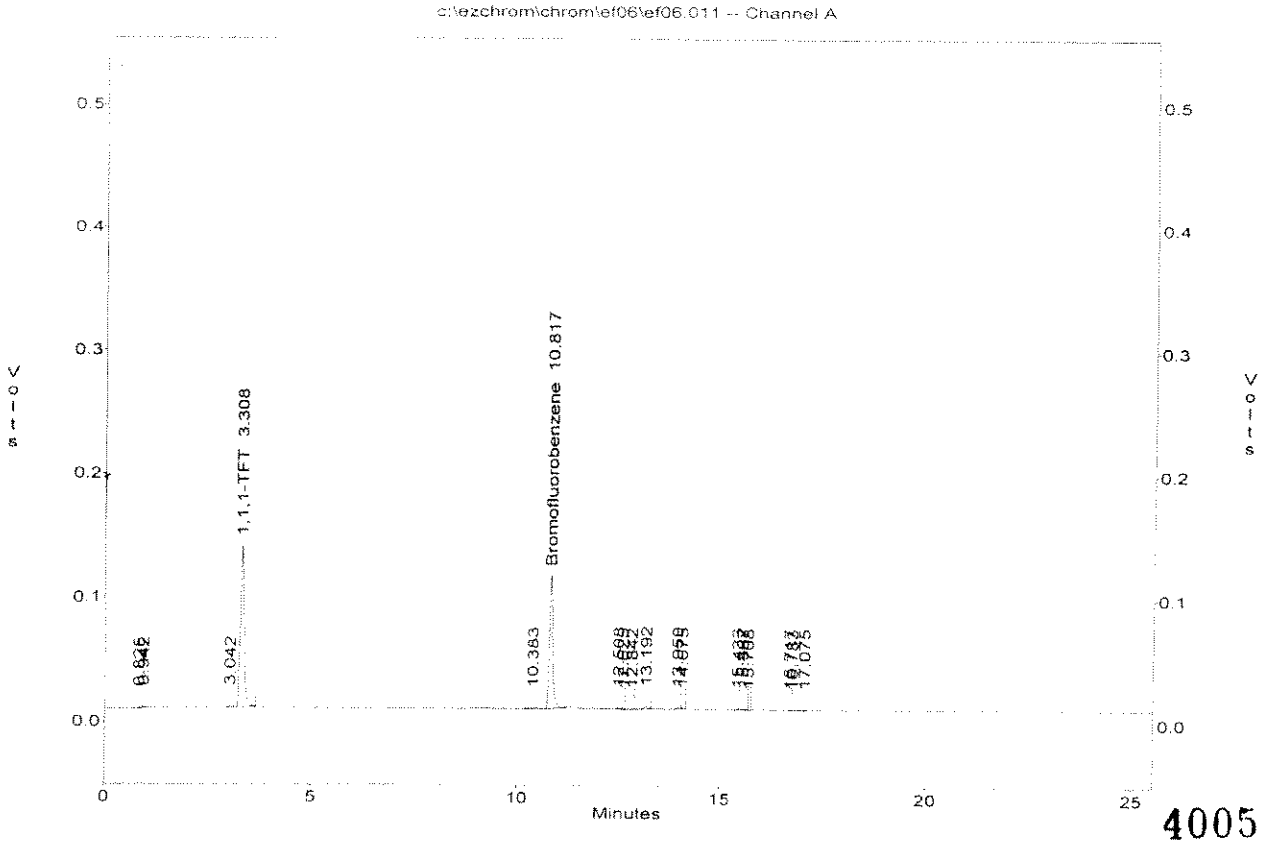
Parameter	H-C Range
Gasoline	C6-C10

METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef06\ef06.011
Method : c:\ezchrom\methods\vg39c30.met
Sample ID : 05F010-03 5.0ML W
Acquired : Jun 06, 2005 17:23:43
Printed : Jun 07, 2005 11:31:43
User : SERGIO

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
4	1,1,1-TFT	3.308	830898.0	23231.0	35.77
6	Bromofluorobenzene	10.817	619468.0	15791.7	39.23
G1	GASOLINE(TOTAL)		75254.0	15626.4	4.82
G2	GRO(C6-C10)		44254.0	13111.9	3.38
G3	GRO(2MP-124TMB)		26772.0	13114.6	2.04
G4	GRO(C5-C12)		75254.0	15510.5	4.85



4005

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/06/05 17:59
Sample ID:	0003-004	Date Analyzed:	06/06/05 17:59
Lab Samp ID:	F010-04	Dilution Factor:	1
Lab File ID:	EF06012A	Matrix :	WATER
Ext Btch ID:	VA39F04	% Moisture :	NA
Calib. Ref.:	EF06002A	Instrument ID :	GCT039

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	.05	.02

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	99	65-135

RL : Reporting Limit

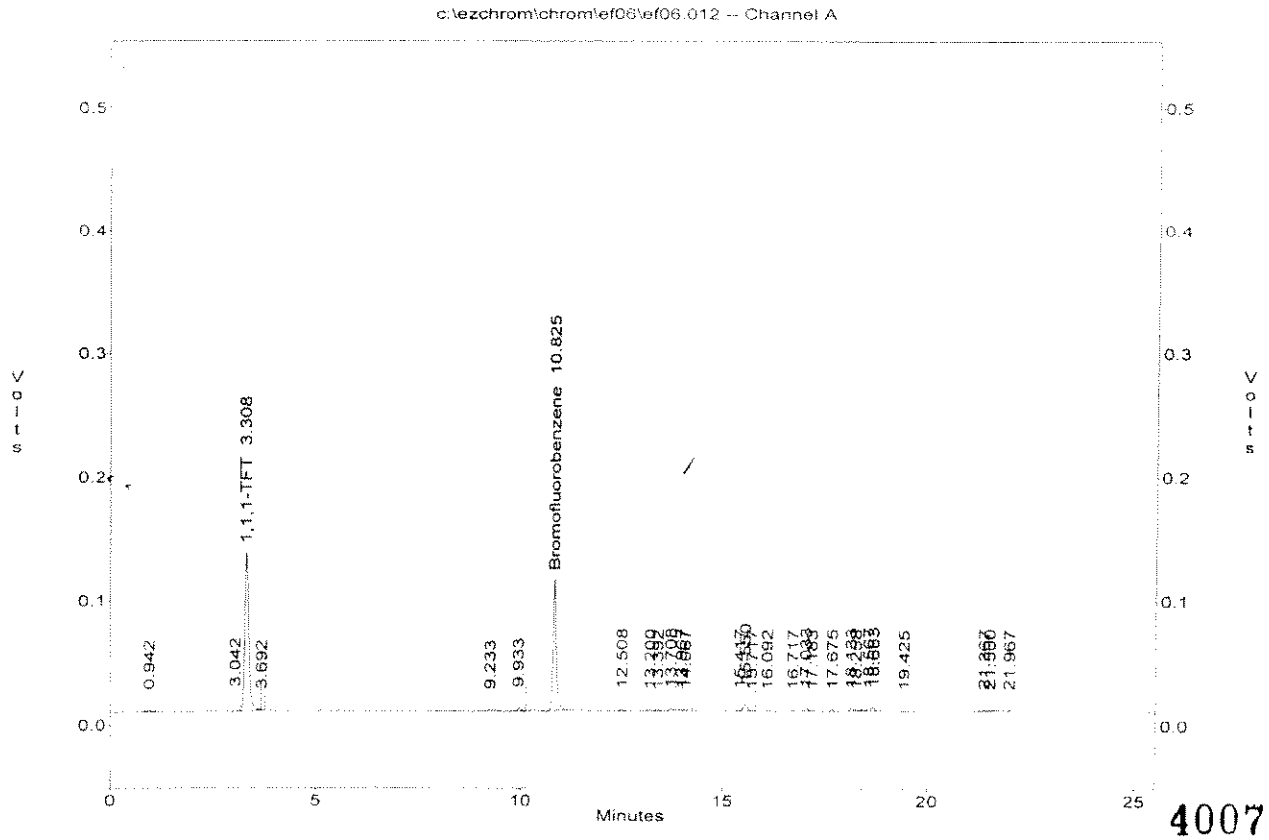
Parameter	H-C Range
Gasoline	C6-C10

METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef06\ef06.012
Method : c:\ezchrom\methods\vg39c30.met
Sample ID : 05F010-04 5.0ML W
Acquired : Jun 06, 2005 17:59:52
Printed : Jun 07, 2005 11:36:51
User : SERGIO

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
3	1,1,1-TFT	3.308	843584.0	23231.0	36.31
7	Bromofluorobenzene	10.825	625491.0	15791.7	39.61
G1	GASOLINE(TOTAL)		245823.0	15626.4	15.73
G2	GRO(C6-C10)		48366.0	13111.9	3.69
G3	GRO(2MP-124TMB)		48366.0	13114.6	3.69
G4	GRO(C5-C12)		227204.0	15510.5	14.65



4007

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/06/05 18:36
Sample ID:	0003-005	Date Analyzed:	06/06/05 18:36
Lab Samp ID:	F010-05	Dilution Factor:	1
Lab File ID:	EF06013A	Matrix :	WATER
Ext Btch ID:	VA39F04	% Moisture :	NA
Calib. Ref.:	EF06002A	Instrument ID :	GCT039

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	.05	.02

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	100	65-135

RL : Reporting Limit

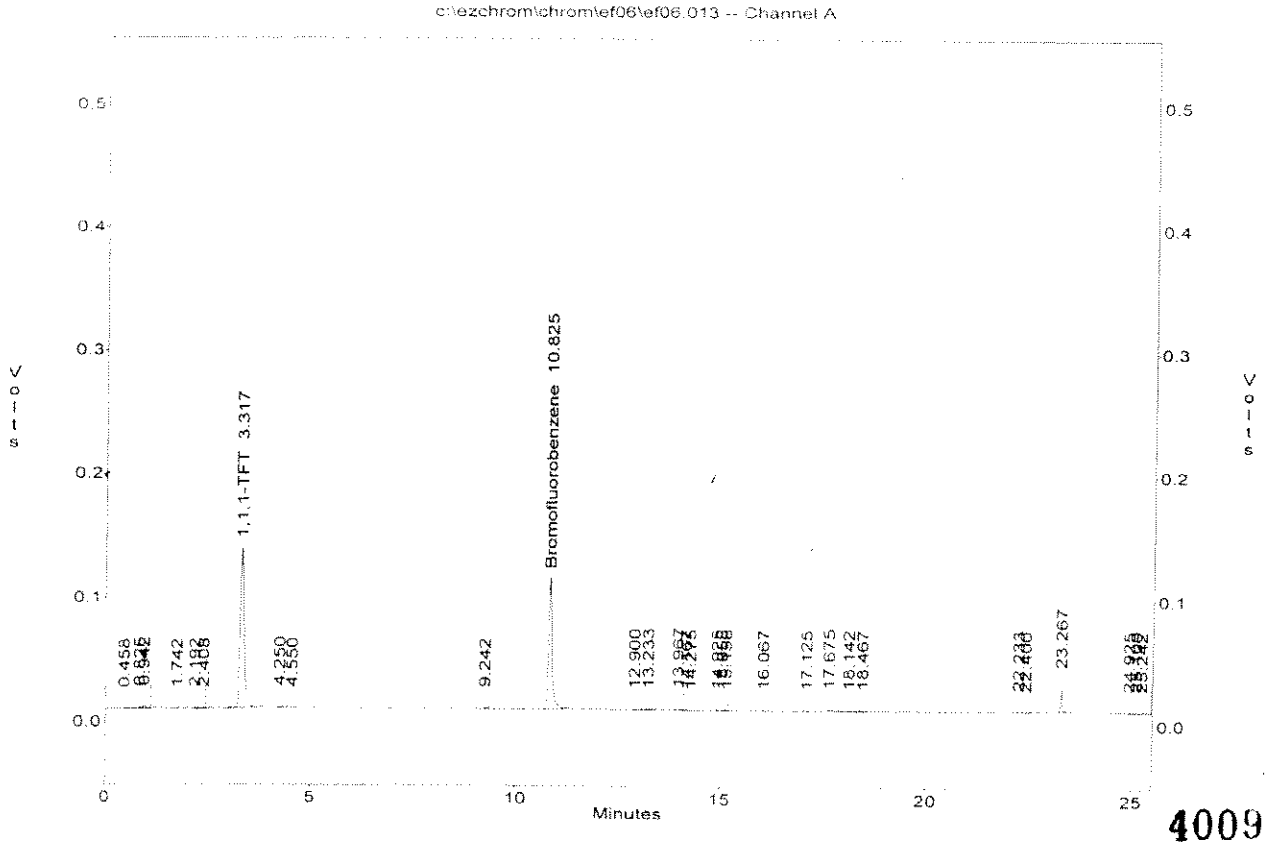
Parameter	H-C Range
Gasoline	C6-C10

METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef06\ef06.013
Method : c:\ezchrom\methods\vg39c30.met
Sample ID : 05F010-05 5.0ML W
Acquired : Jun 06, 2005 18:36:03
Printed : Jun 07, 2005 11:40:05
User : SERGIO

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
7	1,1,1-TFT	3.317	870458.0	23231.0	37.47
11	Bromofluorobenzene	10.825	630464.0	15791.7	39.92
G1	GASOLINE(TOTAL)		141212.0	15626.4	9.04
G2	GRO(C6-C10)		31673.0	13111.9	2.42
G3	GRO(2MP-124TMB)		31673.0	13114.6	2.42
G4	GRO(C5-C12)		82238.0	15510.5	5.30



4009

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/06/05 19:12
Sample ID:	0003-006	Date Analyzed:	06/06/05 19:12
Lab Samp ID:	F010-06	Dilution Factor:	1
Lab File ID:	EF06014A	Matrix :	WATER
Ext Btch ID:	VA39F04	% Moisture :	NA
Calib. Ref.:	EF06002A	Instrument ID :	GCT039

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	.05	.02

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	102	65-135

RL : Reporting Limit

Parameter	H-C Range
Gasoline	C6-C10

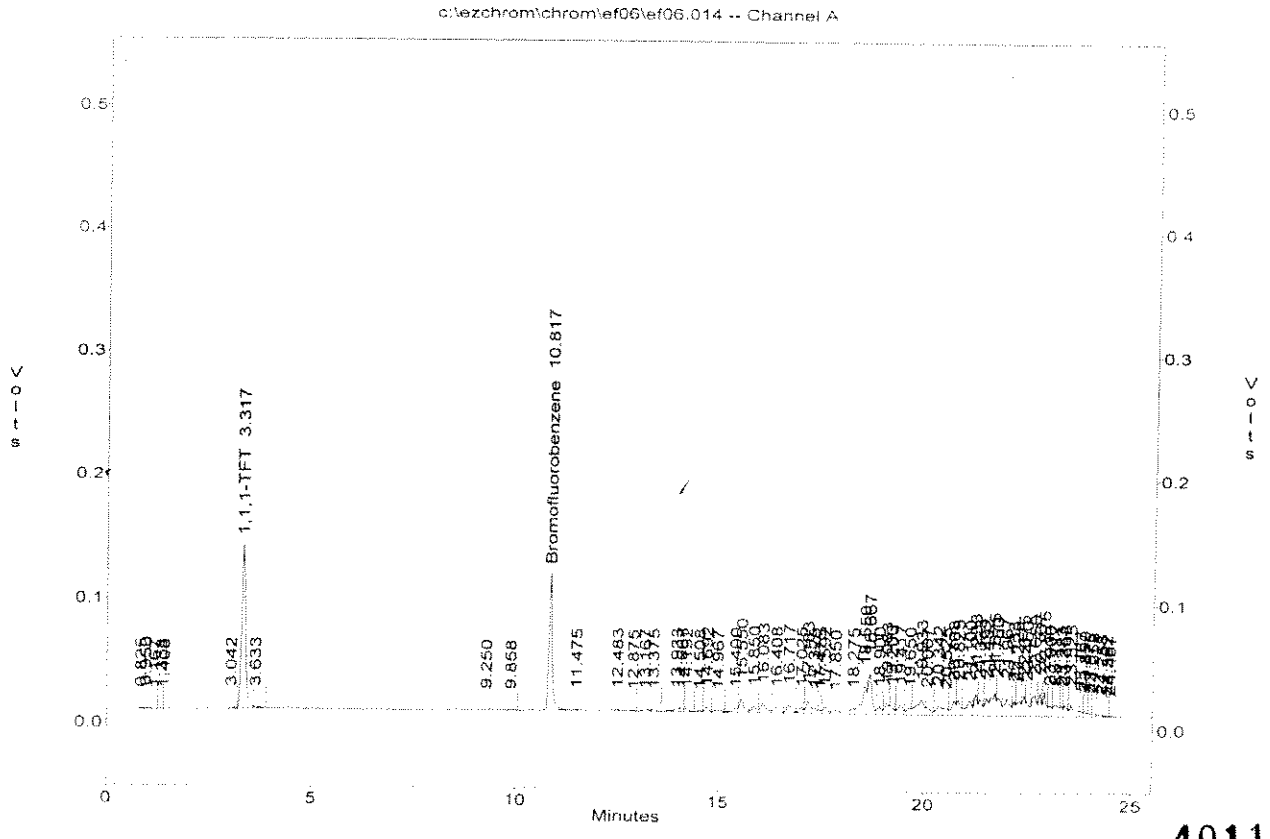
4010

METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef06\ef06.014
Method : c:\ezchrom\methods\vg39c30.met
Sample ID : 05F010-06 5.0ML W
Acquired : Jun 06, 2005 19:12:10
Printed : Jun 07, 2005 11:42:47
User : SERGIO

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
7	1,1,1-TFT	3.317	866595.0	23231.0	37.30
11	Bromofluorobenzene	10.817	646960.0	15791.7	40.97
G1	GASOLINE(TOTAL)		3856333.0	15626.4	246.78
G2	GRO(C6-C10)		85134.0	13111.9	6.49
G3	GRO(2MP-124TMB)		61013.0	13114.6	4.65
G4	GRO(C5-C12)		1308423.0	15510.5	84.36



4011

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : SES-TECH	Date Collected: 06/01/05
Project : CAMP PENDLETON, UST SITE 14121	Date Received: 06/01/05
Batch No. : 05F010	Date Extracted: 06/06/05 19:48
Sample ID: 0003-007	Date Analyzed: 06/06/05 19:48
Lab Samp ID: F010-07	Dilution Factor: 1
Lab File ID: EF06015A	Matrix : WATER
Ext Btch ID: VA39F04	% Moisture : NA
Calib. Ref.: EF06002A	Instrument ID : GCT039

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	.05	.02

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	95	65-135

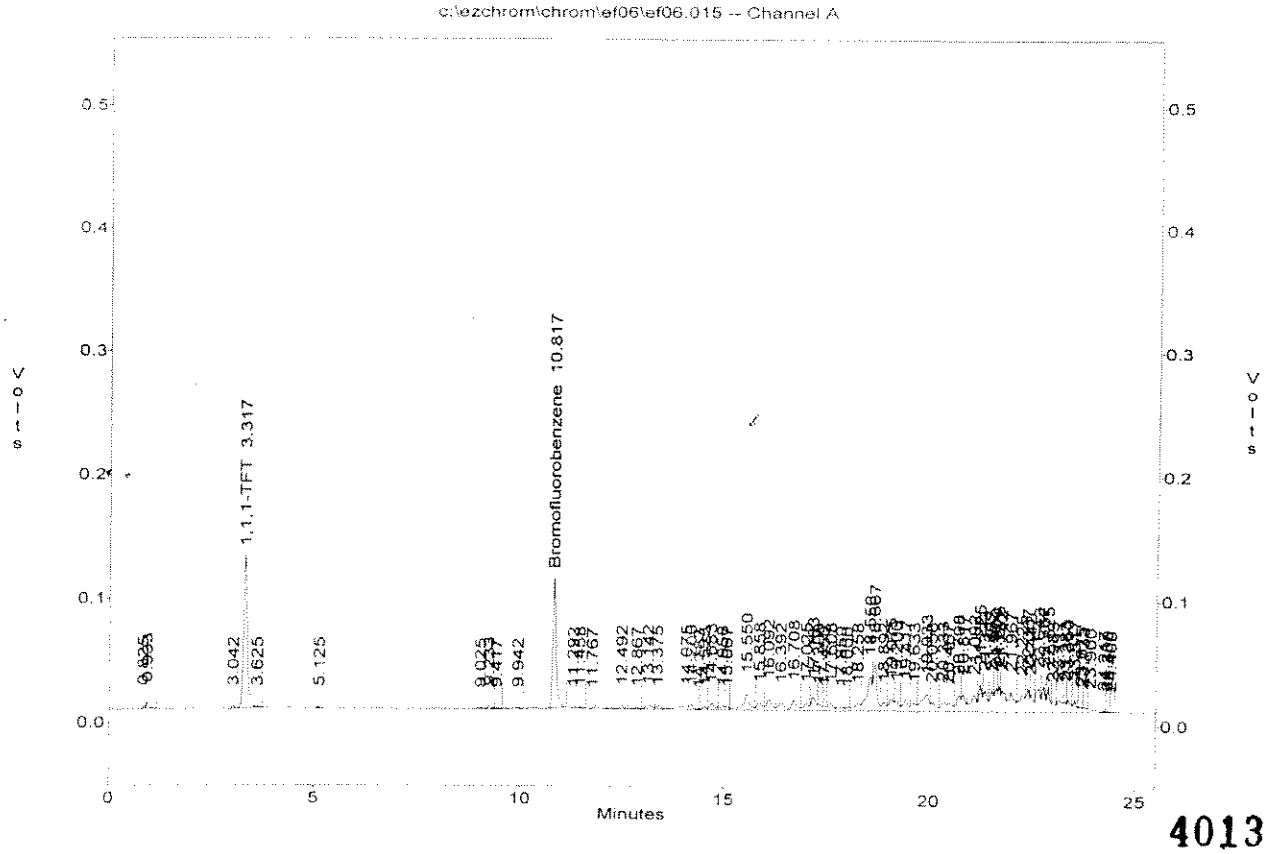
RL : Reporting Limit
Parameter H-C Range
Gasoline C6-C10

METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef06\ef06.015
Method : c:\ezchrom\methods\vg39c30.met
Sample ID : 05F010-07 5.0ML W
Acquired : Jun 06, 2005 19:48:13
Printed : Jun 07, 2005 11:46:22
User : SERGIO

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
4	1,1,1-TFT	3.317	806160.0	23231.0	34.70
11	Bromofluorobenzene	10.817	598060.0	15791.7	37.87
G1	GASOLINE(TOTAL)		4437532.0	15626.4	283.98
G2	GRO(C6-C10)		139319.0	13111.9	10.63
G3	GRO(2MP-124TMB)		104003.0	13114.6	7.93
G4	GRO(C5-C12)		1620746.0	15510.5	104.49



4013

EMAX LABORATORIES, INC.

QC SUMMARIES

4014

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: SES-TECH	Date Collected:	NA
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/06/05
Batch No.	: 05F010	Date Extracted:	06/06/05 13:11
Sample ID	: MBLK1W	Date Analyzed:	06/06/05 13:11
Lab Samp ID	: VA39F04B	Dilution Factor:	1
Lab File ID	: EF06004A	Matrix	: WATER
Ext Btch ID	: VA39F04	% Moisture	: NA
Calib. Ref.	: EF06002A	Instrument ID	: GCT039

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	.05	.02

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	95	65-135

RL : Reporting Limit

Parameter	H-C Range
Gasoline	C6-C10

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SES-TECH
PROJECT: CAMP PENDLETON, UST SITE 14121
BATCH NO.: 05F010
METHOD: METHOD 5030B/8015B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VA39F04B	VA39F04L	VA39F04C		
LAB FILE ID:	EF06004A	EF06005A	EF06006A		
DATE EXTRACTED:	06/06/0513:11	06/06/0513:47	06/06/0514:23	DATE COLLECTED:	NA
DATE ANALYZED:	06/06/0513:11	06/06/0513:47	06/06/0514:23	DATE RECEIVED:	06/06/05
PREP. BATCH:	VA39F04	VA39F04	VA39F04		
CALIB. REF:	EF06002A	EF06002A	EF06002A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Gasoline	ND	.5	.406	81	.5	.414	83	2	65-135	30

SURROGATE PARAMETER	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	QC LIMIT (%)
Bromofluorobenzene	.04	.0424	106	.04	.0369	92	65-135

EMAX

LABORATORY REPORT FOR

SES-TECH

CAMP PENDLETON, UST SITE 14121

METHOD 5030B/8021B
VOLATILE AROMATICS BY GC

SDG#: 05F010

4047

EMAX LABORATORIES, INC.

CASE NARRATIVE

CLIENT: SES-TECH

PROJECT: CAMP PENDLETON, UST SITE 14121

SDG: 05F010

METHOD 5030B/8021B
VOLATILE AROMATICS BY GC

Seven (7) water samples were received on 06/01/05 for Volatile Aromatics by GC by Method 5030/8021B in accordance with SW846 3rd Edition.

1. **Holding Time**

   Analytical holding time was met. Samples were preserved.

2. **Calibration**

   Initial calibration was six points. %RSDs were within 20%. Continuing calibrations were carried out within 12-hour intervals. All recoveries were within 85-115%.

3. **Method Blank**

   Method blank was free of contamination at the reporting limit.

4. **Surrogate Recovery**

   Recoveries were within QC limits.

5. **Lab Control Sample/Lab Control Sample Duplicate**

   All recoveries were within QC limits.

6. **Matrix Spike/Matrix Spike Duplicate**

   No sample was spiked.

7. **Sample Analysis**

   Samples were analyzed according to the prescribed QC procedures. All criteria were met. All positive results above RL were confirmed by GC/FID, for MTBE confirmed by GC/MS.

LAB CHRONICLE
VOLATILE AROMATICS BY GC

Client : SES-TECH
Project : CAMP PENDLETON, UST SITE 14121

SDG NO. : 05F010
Instrument ID : GCT039

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VA39F04B	1	NA	06/06/0513:11	06/06/0513:11	EF06004B	EF06003B	VA39F04	Method Blank
LCS1W	VA39F05L	1	NA	06/06/0514:59	06/06/0514:59	EF06007B	EF06003B	VA39F04	Lab Control Sample (LCS)
LCD1W	VA39F05C	1	NA	06/06/0515:35	06/06/0515:35	EF06008B	EF06003B	VA39F04	LCS Duplicate
0003-001	F010-01	1	NA	06/06/0516:11	06/06/0516:11	EF06009B	EF06003B	VA39F04	Field Sample
0003-002	F010-02	1	NA	06/06/0516:47	06/06/0516:47	EF06010B	EF06003B	VA39F04	Field Sample
0003-003	F010-03	1	NA	06/06/0517:23	06/06/0517:23	EF06011B	EF06003B	VA39F04	Field Sample
0003-004	F010-04	1	NA	06/06/0517:59	06/06/0517:59	EF06012B	EF06003B	VA39F04	Field Sample
0003-005	F010-05	1	NA	06/06/0518:36	06/06/0518:36	EF06013B	EF06003B	VA39F04	Field Sample
0003-006	F010-06	1	NA	06/06/0519:12	06/06/0519:12	EF06014B	EF06003B	VA39F04	Field Sample
0003-007	F010-07	1	NA	06/06/0519:48	06/06/0519:48	EF06015B	EF06003B	VA39F04	Field Sample

FN - Filename
% Moist - Percent Moisture

EMAX LABORATORIES, INC.

SAMPLE RESULTS

4050

EMAX LABORATORIES, INC.

EPA METHOD 5030B/8021B
VOLATILE AROMATICS BY GC

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/06/05 16:11
Sample ID	: 0003-001	Date Analyzed:	06/06/05 16:11
Lab Samp ID	: F010-01	Dilution Factor:	1
Lab File ID	: EF06009B	Matrix	: WATER
Ext Btch ID	: VA39F04	% Moisture	: NA
Calib. Ref.	: EF06003B	Instrument ID	: GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
BENZENE	ND	.5	.1
TOLUENE	ND	.5	.1
ETHYLBENZENE	ND	.5	.1
XYLENES	ND	1.5	.3
MTBE	ND	1	.5

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	104	75-125
1,1,1-TFT	103	75-125

RL: Reporting Limit

EMAX LABORATORIES, INC.

EPA METHOD 5030B/8021B
VOLATILE AROMATICS BY GC

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/06/05 16:47
Sample ID	: 0003-002	Date Analyzed:	06/06/05 16:47
Lab Samp ID	: F010-02	Dilution Factor:	1
Lab File ID	: EF060108	Matrix :	WATER
Ext Btch ID	: VA39FD4	% Moisture :	NA
Calib. Ref.	: EF060038	Instrument ID :	GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
BENZENE	ND	.5	.1
TOLUENE	ND	.5	.1
ETHYLBENZENE	ND	.5	.1
XYLENES	ND	1.5	.3
MTBE	ND	1	.5

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	110	75-125
1,1,1-TFT	109	75-125

RL: Reporting Limit

EMAX LABORATORIES, INC.

EPA METHOD 5030B/8021B
VOLATILE AROMATICS BY GC

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/06/05 17:23
Sample ID	: 0003-003	Date Analyzed:	06/06/05 17:23
Lab Samp ID	: F010-03	Dilution Factor:	1
Lab File ID	: EF060118	Matrix :	WATER
Ext Btch ID	: VA39F04	% Moisture :	NA
Calib. Ref.	: EF060038	Instrument ID :	GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
BENZENE	.32J	.5	.1
TOLUENE	ND	.5	.1
ETHYLBENZENE	ND	.5	.1
XYLENES	ND	1.5	.3
MTBE	ND	1	.5

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	105	75-125
1,1,1-TFT	104	75-125

RL: Reporting Limit

EMAX LABORATORIES, INC.

EPA METHOD 5030B/8021B
VOLATILE AROMATICS BY GC

Cli	Client : SES-TECH	Date Collected:	06/01/05
Pro	Project : CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Bat	Batch No. : 05F010	Date Extracted:	06/06/05 17:59
Sam	Sample ID: 0003-004	Date Analyzed:	06/06/05 17:59
Lab	Lab Samp ID: F010-04	Dilution Factor:	1
Lab	Lab File ID: EF06012B	Matrix :	WATER
Ext	Ext Btch ID: VA39F04	% Moisture :	NA
Cal	Calib. Ref.: EF06003B	Instrument ID :	GCT039

PAR	PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
BEN	BENZENE	.46J	.5	.1
TOL	TOLUENE	ND	.5	.1
ETH	ETHYLBENZENE	ND	.5	.1
XYL	XYLENES	.59J	1.5	.3
MTB	MTBE	ND	1	.5

SUR	SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BRO	BROMOFLUOROBENZENE	105	75-125
1,1	1,1,1-TFT	106	75-125

RL: RL: Reporting Limit

EMAX LABORATORIES, INC.

EPA METHOD 5030B/8021B
VOLATILE AROMATICS BY GC

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/06/05 18:36
Sample ID	: 0003-005	Date Analyzed:	06/06/05 18:36
Lab Samp ID	: F010-05	Dilution Factor:	1
Lab File ID	: EF060138	Matrix :	WATER
Ext Btch ID	: VA39F04	% Moisture :	NA
Calib. Ref.	: EF060038	Instrument ID :	GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
BENZENE	ND	.5	.1
TOLUENE	ND	.5	.1
ETHYLBENZENE	ND	.5	.1
XYLENES	ND	1.5	.3
MTBE	ND	1	.5

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	108	75-125
1,1,1-TFT	108	75-125

RL: Reporting Limit

4055

EMAX LABORATORIES, INC.

EPA METHOD 5030B/8021B
VOLATILE AROMATICS BY GC

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/06/05 19:12
Sample ID	: 0003-006	Date Analyzed:	06/06/05 19:12
Lab Samp ID	: F010-06	Dilution Factor:	1
Lab File ID	: EF060148	Matrix	: WATER
Ext Btch ID	: VA39F04	% Moisture	: NA
Calib. Ref.	: EF060038	Instrument ID	: GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
BENZENE	.41J	.5	.1
TOLUENE	ND	.5	.1
ETHYLBENZENE	ND	.5	.1
XYLENES	ND	1.5	.3
MTBE	ND	1	.5

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	108	75-125
1,1,1-TFT	109	75-125

RL: Reporting Limit

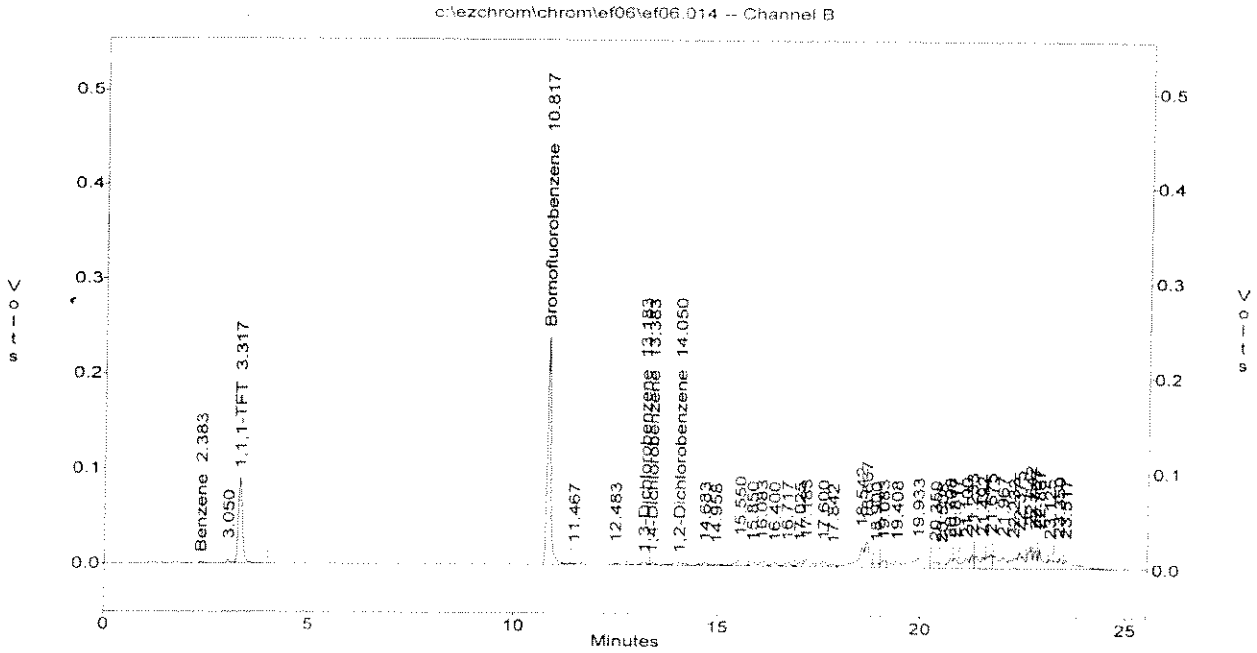
4056

METHOD 8021 by PID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ef06\ef06.014
Method : c:\ezchrom\methods\vg39c30.met
Sample ID : 05F010-06 5.0ML W
Acquired : Jun 06, 2005 19:12:10
Printed : Jun 07, 2005 11:42:47
User : SERGIO

Channel B Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
--	MTBE	1.450	0.0	0.0	0.00
1	Benzene	2.383	9299.0	22516.2	0.41
3	1,1,1-TFT	3.317	591235.0	13499.4	43.80
--	Toluene	5.100	0.0	0.0	0.00
--	Chlorobenzene	8.400	0.0	0.0	0.00
--	Ethylbenzene	8.917	0.0	0.0	0.00
--	M/P-Xylenes	9.200	0.0	0.0	0.00
--	O-Xylene	9.908	0.0	0.0	0.00
4	Bromofluorobenzene	10.817	1395853.0	32311.8	43.20
7	1,3-Dichlorobenzene	13.183	33948.0	30849.1	1.10
8	1,4-Dichlorobenzene	13.383	19554.0	38367.2	0.51
9	1,2-Dichlorobenzene	14.050	68521.0	26365.0	2.60



4057

EMAX LABORATORIES, INC.

EPA METHOD 5030B/8021B
VOLATILE AROMATICS BY GC

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F01Q	Date Extracted:	06/06/05 19:48
Sample ID	: 0003-007	Date Analyzed:	06/06/05 19:48
Lab Samp ID	: F010-07	Dilution Factor:	1
Lab File ID	: EF06015B	Matrix	: WATER
Ext Btch ID	: VA39F04	% Moisture	: NA
Calib. Ref.	: EF06003B	Instrument ID	: GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
BENZENE	.39J	.5	.1
TOLUENE	.24J	.5	.1
ETHYLBENZENE	ND	.5	.1
XYLENES	.36J	1.5	.3
MTBE	ND	1	.5

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	105	75-125
1,1,1-TFT	101	75-125

RL: Reporting Limit

4058

EMAX
LABORATORIES, INC.

QC SUMMARIES

4059

EMAX LABORATORIES, INC.

EPA METHOD 5030B/8021B
VOLATILE AROMATICS BY GC

Client	: SES-TECH	Date Collected:	NA
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/06/05
Batch No.	: 05F010	Date Extracted:	06/06/05 13:11
Sample ID:	MBLK1W	Date Analyzed:	06/06/05 13:11
Lab Samp ID:	VA39F04B	Dilution Factor:	1
Lab File ID:	EF060048	Matrix :	WATER
Ext Btch ID:	VA39F04	% Moisture :	NA
Calib. Ref.:	EF060038	Instrument ID :	GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
BENZENE	ND	.5	.1
TOLUENE	ND	.5	.1
ETHYLBENZENE	ND	.5	.1
XYLENES	ND	1.5	.3
MTBE	ND	1	.5

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	101	75-125
1,1,1-TFT	102	75-125

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SES-TECH
PROJECT: CAMP PENDLETON, UST SITE 14121
BATCH NO.: 05F010
METHOD: EPA METHOD 5030B/8021B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VA39F04B	VA39F05L	VA39F05C		
LAB FILE ID:	EF06004B	EF06007B	EF06008B		
DATE EXTRACTED:	06/06/0513:11	06/06/0514:59	06/06/0515:35	DATE COLLECTED:	NA
DATE ANALYZED:	06/06/0513:11	06/06/0514:59	06/06/0515:35	DATE RECEIVED:	06/06/05
PREP. BATCH:	VA39F04	VA39F04	VA39F04		
CALIB. REF:	EF06003B	EF06003B	EF06003B		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Benzene	ND	40	39.5	99	40	41.4	104	5	75-125	20
Toluene	ND	40	39.2	98	40	41.1	103	5	75-125	20
Ethylbenzene	ND	40	37.7	94	40	39.4	98	4	75-125	20
Xylenes	ND	120	114	95	120	119	99	5	75-125	20
MTBE	ND	40	39.2	98	40	40.6	102	4	75-125	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromofluorobenzene	40	37.5	94	40	39.2	98	75-125
1,1,1-TFT	40	36.9	92	40	38.5	96	75-125

EMAX LABORATORIES, INC.

LABORATORY REPORT FOR

SES-TECH

CAMP PENDLETON, UST SITE 14121

METHOD 3520C/M8015
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 05F010

5000

EMAX LABORATORIES, INC.

CASE NARRATIVE

CLIENT: SES-TECH

PROJECT: CAMP PENDLETON, UST SITE 14121

SDG: 05F010

METHOD 3520C/M8015
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Six (6) water samples were received on 06/01/05 for Total Petroleum Hydrocarbons by Extraction analysis by Method 3520C/M8015 in accordance with SW846 3RD Edition.

1. **Holding Time**

   Analytical holding time was met. Extraction was performed on 06/02/05 and completed on 06/03/05.

2. **Calibration**

   Initial calibration was seven points for Diesel. %RSDs were within 20%. Continuing calibrations were carried out at 12-hour intervals and all recoveries were within 85-115%.

3. **Method Blank**

   Method blank was free of contamination at half of the reporting limit.

4. **Surrogate Recovery**

   All recoveries were within QC limits.

5. **Lab Control Sample/Lab Control Sample Duplicate**

   All recoveries were within QC limits.

6. **Matrix Spike/Matrix Spike Duplicate**

   No sample was designated for MS/MSD.

7. **Sample Analysis**

   Samples were analyzed according to the prescribed QC procedures. All criteria were met. Samples were quantitated from C10 to C24 using Diesel (C10-C24) calibration factor.

   Samples F010-03 to –07 displayed heavier fuel pattern.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : SES-TECH
Project : CAMP PENDLETON, UST SITE 14121

SDG NO. : 05F010
Instrument ID : GCT072

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSF004WB	1	NA	06/03/0516:08	06/02/0516:00	BF03003A	BF03002A	DSF004W	Method Blank
LCS1W	DSF004WL	1	NA	06/03/0516:51	06/02/0516:00	BF03004A	BF03002A	DSF004W	Lab Control Sample (LCS)
LCD1W	DSF004WC	1	NA	06/03/0517:35	06/02/0516:00	BF03005A	BF03002A	DSF004W	LCS Duplicate
0003-002	F010-02	.96	NA	06/03/0519:03	06/02/0516:00	BF03007A	BF03002A	DSF004W	Field Sample
0003-003	F010-03	.97	NA	06/03/0519:47	06/02/0516:00	BF03008A	BF03002A	DSF004W	Field Sample
0003-004	F010-04	.99	NA	06/03/0520:31	06/02/0516:00	BF03009A	BF03002A	DSF004W	Field Sample
0003-005	F010-05	.94	NA	06/03/0521:15	06/02/0516:00	BF03010A	BF03002A	DSF004W	Field Sample
0003-006	F010-06	.96	NA	06/03/0521:59	06/02/0516:00	BF03011A	BF03002A	DSF004W	Field Sample
0003-007	F010-07	.97	NA	06/03/0522:43	06/02/0516:00	BF03012A	BF03002A	DSF004W	Field Sample

FN - Filename
% Moist - Percent Moisture

EMAX
LABORATORIES, INC.

SAMPLE RESULTS

5003

EMAX LABORATORIES, INC.

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/02/05 16:00
Sample ID:	0003-002	Date Analyzed:	06/03/05 19:03
Lab Samp ID:	F010-02	Dilution Factor:	.96
Lab File ID:	BF03007A	Matrix :	WATER
Ext Btch ID:	DSF004W	% Moisture :	NA
Calib. Ref.:	BF03002A	Instrument ID :	GCT072

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
DIESEL	ND	.096	.024

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
HEXACOSANE	125	65-135

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24

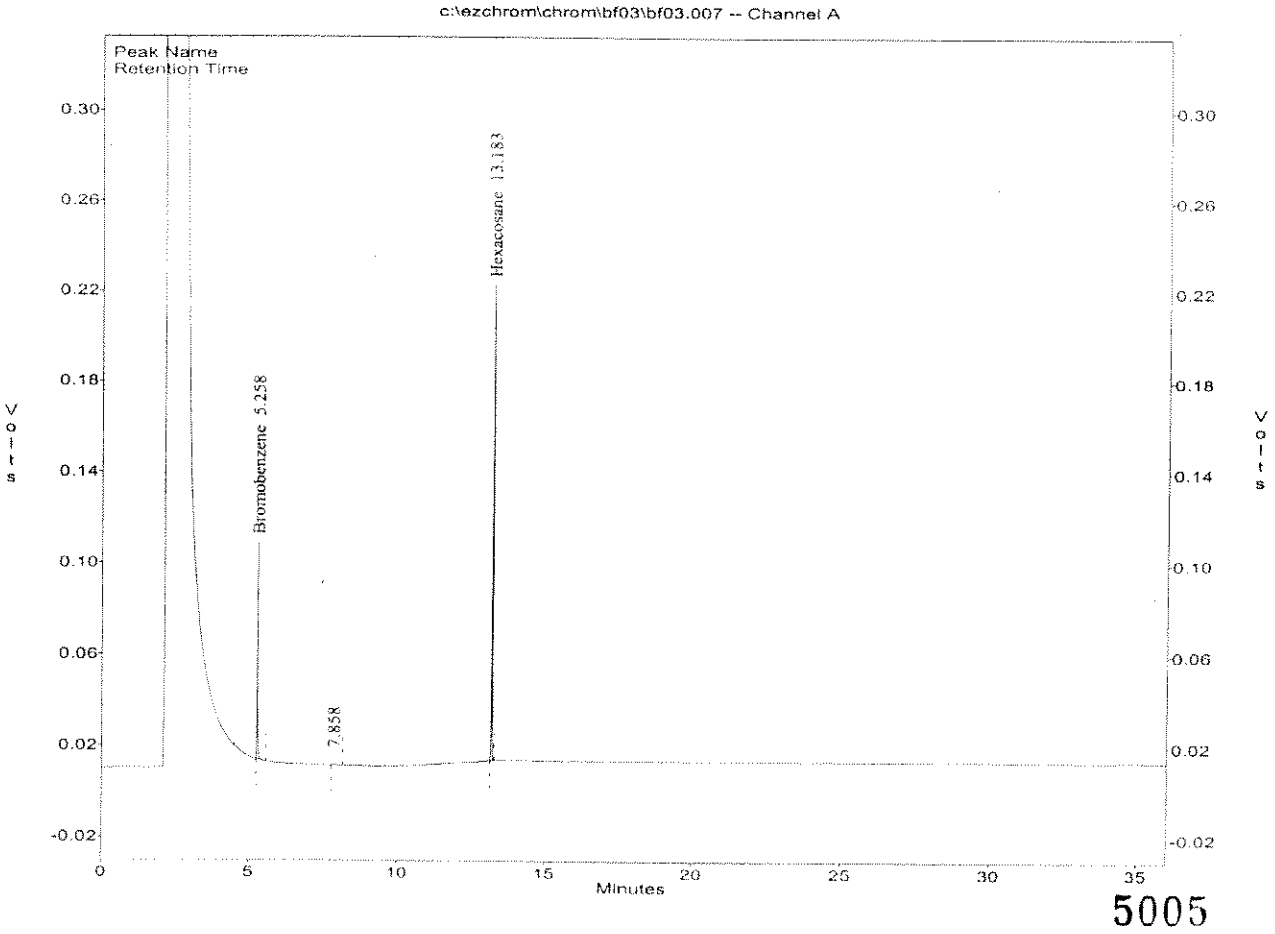
5004

METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf03\bf03.007
Method : c:\ezchrom\methods\ds72e11.met
Sample ID : 05F010-02
Acquired : Jun 03, 2005 19:03:23
Printed : Jun 06, 2005 10:13:03
User : JANE

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
1	Bromobenzene	5.258	163459	6406.2	25.5
3	Hexacosane	13.183	373627	11957.9	31.2
G1	Diesel(TOTAL)		1427	10848.4	0.1
G2	Diesel(C10-C24)		1427	10797.5	0.1
G3	Diesel(C10-C28)		1427	10799.8	0.1



5005

EMAX LABORATORIES, INC.

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/02/05 16:00
Sample ID:	0003-003	Date Analyzed:	06/03/05 19:47
Lab Samp ID:	F010-03	Dilution Factor:	.97
Lab File ID:	BF03008A	Matrix :	WATER
Ext Btch ID:	DSF004W	% Moisture :	NA
Calib. Ref.:	BF03002A	Instrument ID :	GCT072

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
DIESEL	.21	.097	.024

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
HEXACOSANE	119	65-135

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24

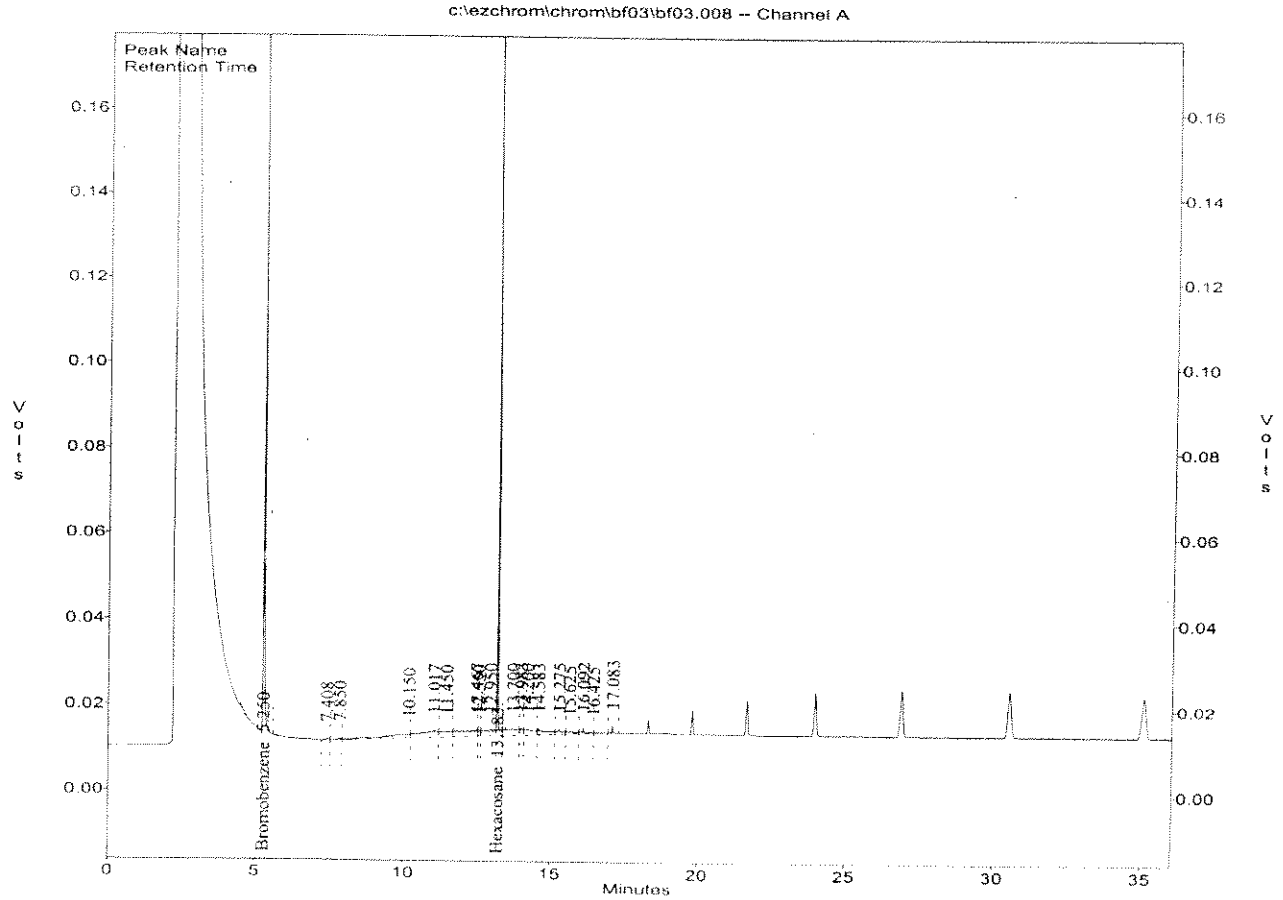
5006

METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf03\bf03.008
Method : c:\ezchrom\methods\ds72e11.met
Sample ID : 05F010-03
Acquired : Jun 03, 2005 19:47:23
Printed : Jun 06, 2005 11:12:38
User : JANE

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
1	Bromobenzene	5.250	582462	6406.2	90.9
10	Hexacosane	13.183	356159	11957.9	29.8
G1	Diesel(TOTAL)		436570	10848.4	40.2
G2	Diesel(C10-C24)		228494	10797.5	21.2
G3	Diesel(C10-C28)		335850	10799.8	31.1



5007

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/02/05 16:00
Sample ID:	0003-004	Date Analyzed:	06/03/05 20:31
Lab Samp ID:	F010-04	Dilution Factor:	.99
Lab File ID:	BF03009A	Matrix :	WATER
Ext Btch ID:	DSF004W	% Moisture :	NA
Calib. Ref.:	BF03002A	Instrument ID :	GCT072

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
DIESEL	.86	.099	.025

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
HEXACOSANE	130	65-135

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24

5008

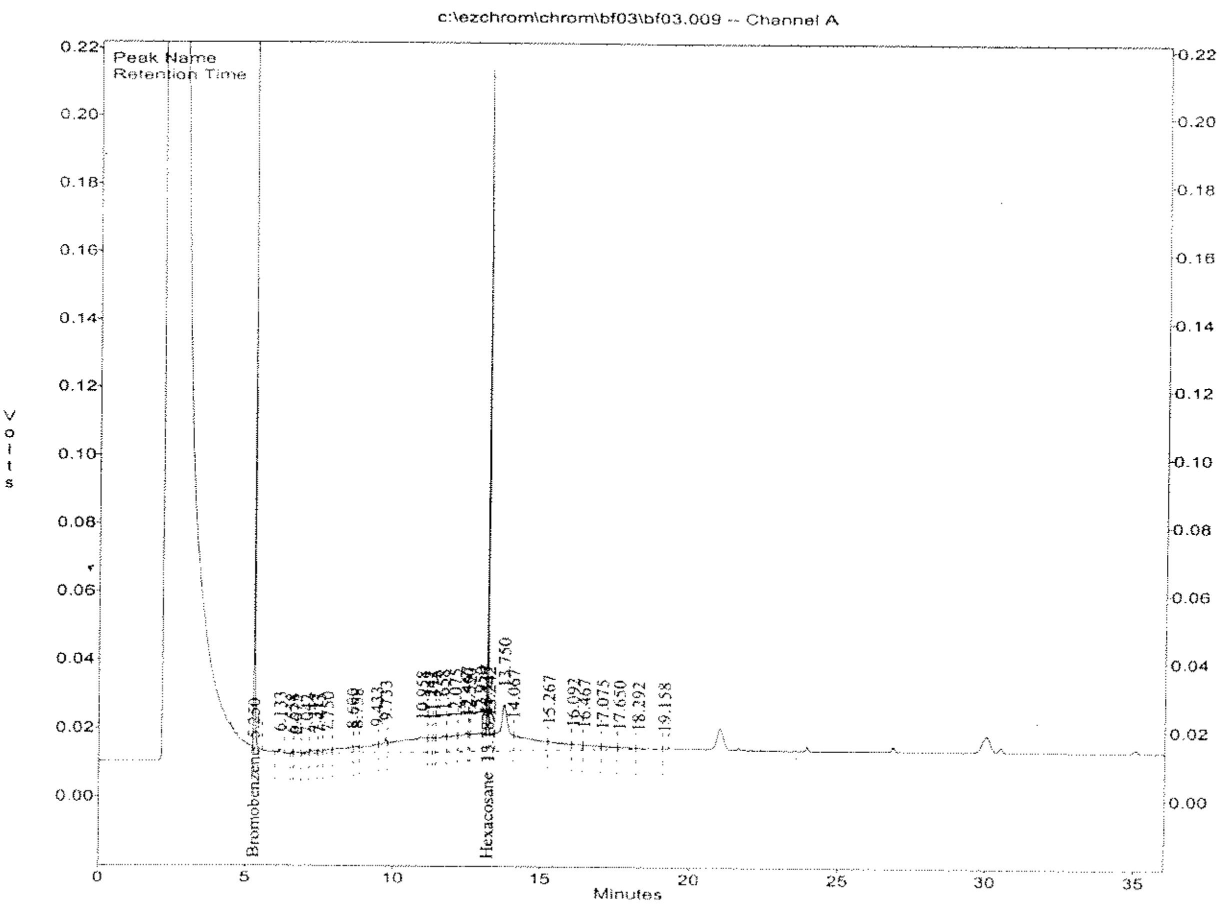
EMAX LABORATORIES, INC.

METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File	: c:\ezchrom\chrom\bf03\bf03.009
Method	: c:\ezchrom\methods\ds72e11.met
Sample ID	: 05F010-04
Acquired	: Jun 03, 2005 20:31:19
Printed	: Jun 09, 2005 16:50:22
User	: JANE

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
1	Bromobenzene	5.250	582258	6406.2	90.9
22	Hexacosane	13.183	387281	11957.9	32.4
G1	Diesel(TOTAL)		1865464	10848.4	172.0
G2	Diesel(C10-C24)		940430	10797.5	87.1
G3	Diesel(C10-C28)		1618361	10799.8	149.9



5009
06.09.05

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/02/05 16:00
Sample ID:	0003-005	Date Analyzed:	06/03/05 21:15
Lab Samp ID:	F010-05	Dilution Factor:	.94
Lab File ID:	BF03010A	Matrix :	WATER
Ext Btch ID:	DSF004W	% Moisture :	NA
Calib. Ref.:	BF03002A	Instrument ID :	GCT072

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
DIESEL	.26	.094	.024

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
HEXACOSANE	123	65-135

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24

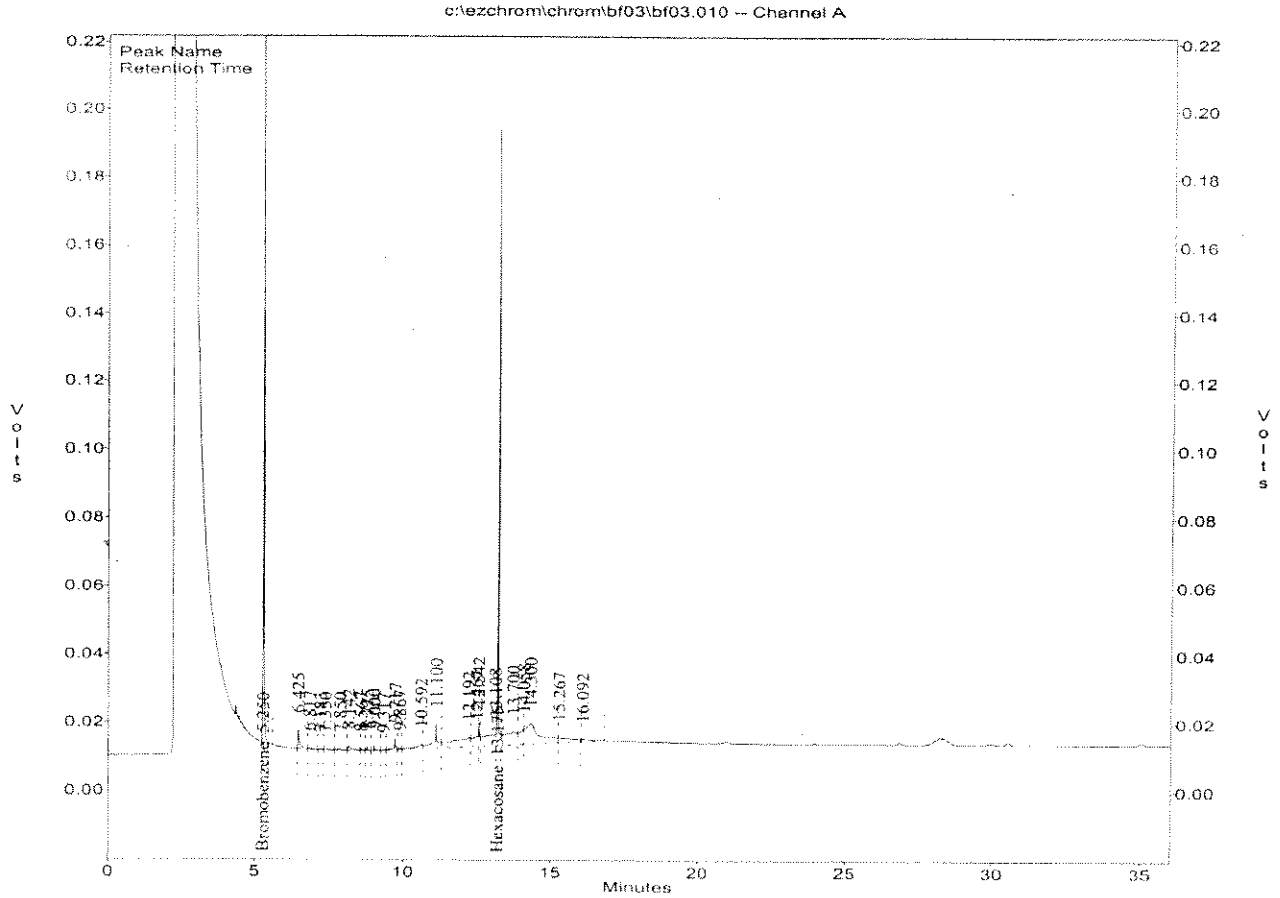
5010

METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf03\bf03.010
Method : c:\ezchrom\methods\ds72e11.met
Sample ID : 05F010-05
Acquired : Jun 03, 2005 21:15:22
Printed : Jun 06, 2005 10:19:18
User : JANE

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
1	Bromobenzene	5.250	647594	6406.2	101.1
20	Hexacosane	13.175	366582	11957.9	30.7
G1	Diesel(TOTAL)		740000	10848.4	68.2
G2	Diesel(C10-C24)		295313	10797.5	27.4
G3	Diesel(C10-C28)		471716	10799.8	43.7



5011
06.06.05

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/02/05 16:00
Sample ID:	0003-006	Date Analyzed:	06/03/05 21:59
Lab Samp ID:	F010-06	Dilution Factor:	.96
Lab File ID:	BF03011A	Matrix :	WATER
Ext Btch ID:	DSF004W	% Moisture :	NA
Calib. Ref.:	BF03002A	Instrument ID :	GCT072

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
DIESEL	1.1	.096	.024

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
HEXACOSANE	122	65-135

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24

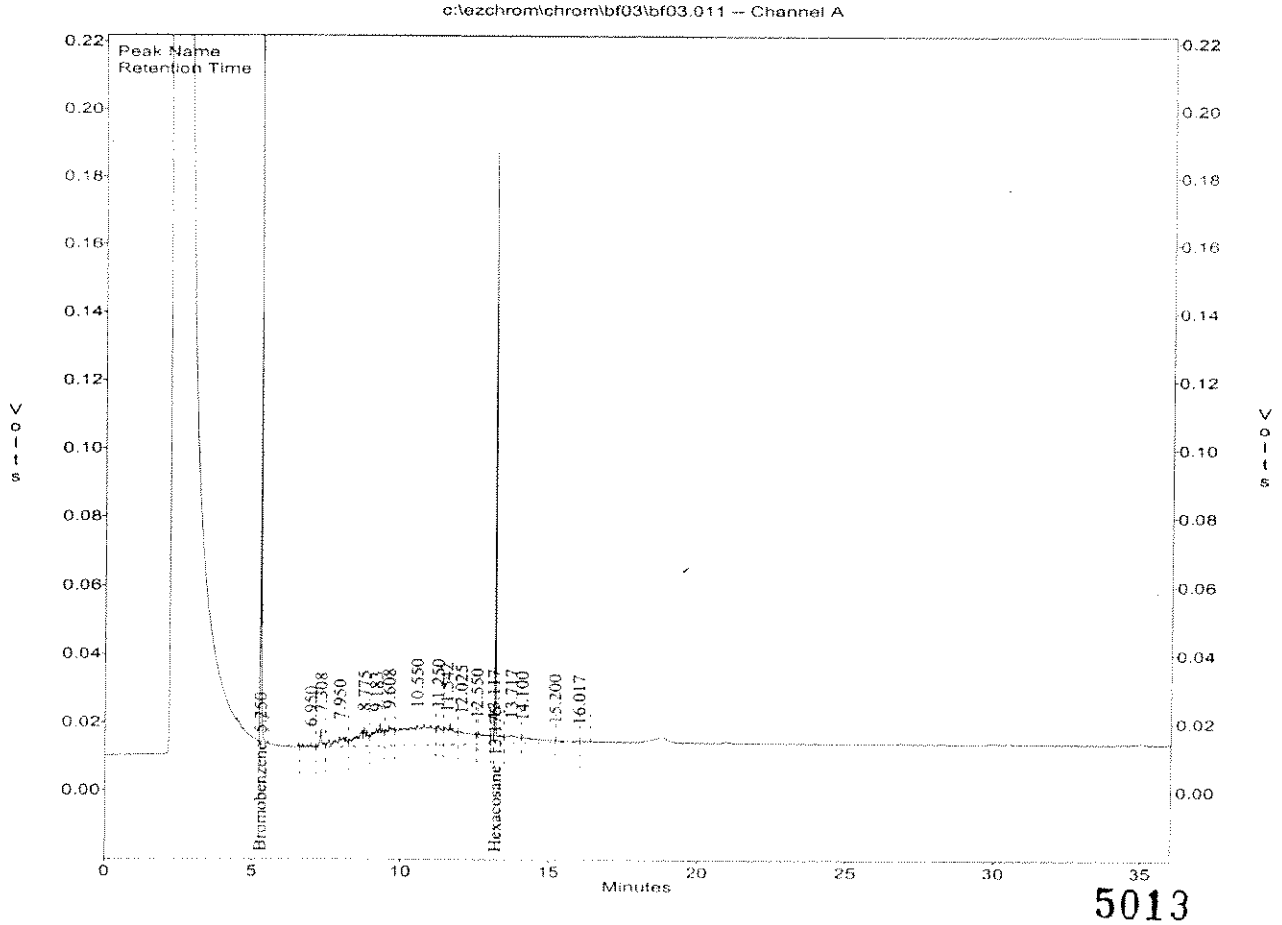
5012

METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf03\bf03.011
Method : c:\ezchrom\methods\ds72e11.met
Sample ID : 05F010-06
Acquired : Jun 03, 2005 21:59:20
Printed : Jun 06, 2005 10:20:24
User : JANE

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
1	Bromobenzene	5.250	540396	6406.2	84.4
15	Hexacosane	13.175	364334	11957.9	30.5
G1	Diesel(TOTAL)		1423124	10848.4	131.2
G2	Diesel(C10-C24)		1185652	10797.5	109.8
G3	Diesel(C10-C28)		1330569	10799.8	123.2



5013

6-16-05

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: SES-TECH	Date Collected:	06/01/05
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/01/05
Batch No.	: 05F010	Date Extracted:	06/02/05 16:00
Sample ID:	0003-007	Date Analyzed:	06/03/05 22:43
Lab Samp ID:	F010-07	Dilution Factor:	.97
Lab File ID:	BF03012A	Matrix :	WATER
Ext Btch ID:	DSF004W	% Moisture :	NA
Calib. Ref.:	BF03002A	Instrument ID :	GCT072

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
DIESEL	1.1	.097	.024

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
HEXACOSANE	130	65-135

RL : Reporting Limit

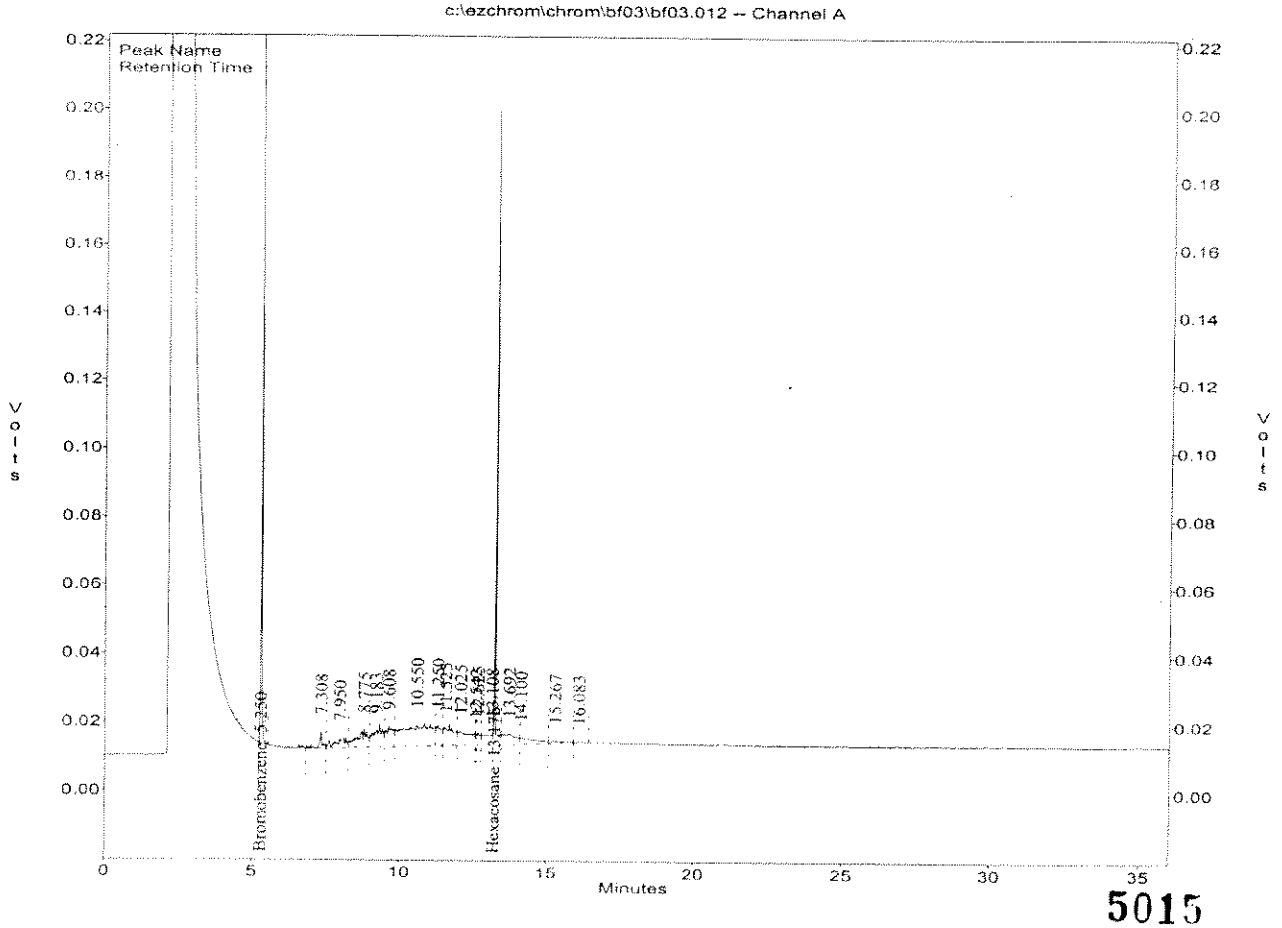
Parameter	H-C Range
Diesel	C10-C24

METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf03\bf03.012
Method : c:\ezchrom\methods\ds72e11.met
Sample ID : 05F010-07
Acquired : Jun 03, 2005 22:43:21
Printed : Jun 06, 2005 10:21:08
User : JANE

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
1	Bromobenzene	5.250	501020	6406.2	78.2
14	Hexacosane	13.175	390065	11957.9	32.6
G1	Diesel(TOTAL)		1422012	10848.4	131.1
G2	Diesel(C10-C24)		1192110	10797.5	110.4
G3	Diesel(C10-C28)		1325371	10799.8	122.7



5015

EMAX
LABORATORIES, INC.

QC SUMMARIES

5016

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: SES-TECH	Date Collected:	NA
Project	: CAMP PENDLETON, UST SITE 14121	Date Received:	06/02/05
Batch No.	: 05F010	Date Extracted:	06/02/05 16:00
Sample ID:	MBLK1W	Date Analyzed:	06/03/05 16:08
Lab Samp ID:	DSF004WB	Dilution Factor:	1
Lab File ID:	BF03003A	Matrix :	WATER
Ext Btch ID:	DSF004W	% Moisture :	NA
Calib. Ref.:	BF03002A	Instrument ID :	GCT072

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
DIESEL	ND	.1	.025

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
HEXACOSANE	100	65-135

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24

5017

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SES-TECH
PROJECT: CAMP PENDLETON, UST SITE 14121
BATCH NO.: 05F010
METHOD: METHOD 3520C/8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSF004WB	DSF004WL	DSF004WC		
LAB FILE ID:	BF03003A	BF03004A	BF03005A		
DATE EXTRACTED:	06/02/0516:00	06/02/0516:00	06/02/0516:00	DATE COLLECTED:	NA
DATE ANALYZED:	06/03/0516:08	06/03/0516:51	06/03/0517:35	DATE RECEIVED:	06/02/05
PREP. BATCH:	DSF004W	DSF004W	DSF004W		
CALIB. REF:	BF03002A	BF03002A	BF03002A ✓		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	5	4.62	92	5	4.59	92	1	65-135	30

✓

SURROGATE PARAMETER	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	QC LIMIT (%)
Hexacosane	.25	.297	119	.25	.303	121	65-135